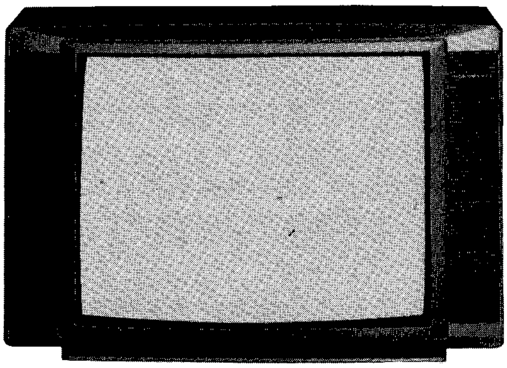
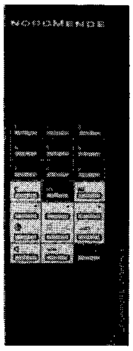
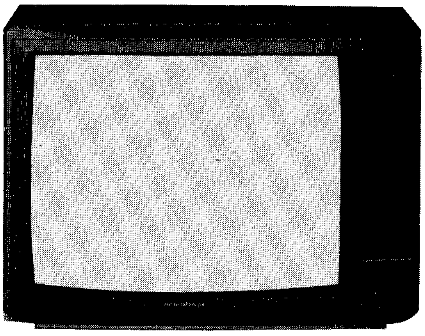
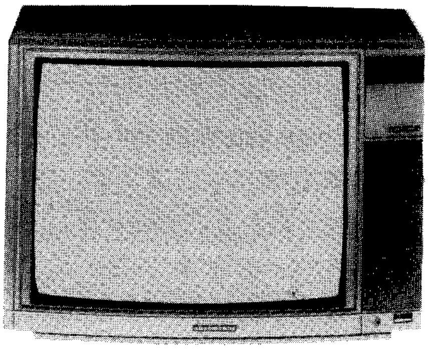
TECHNISCHER KUNDENDIENST

Service-Information









FFS-Chassis F15 (110°) F16 (90°) Mono

Color 3031	986.526 J / 987.526 J
Color 3035	986.529 J / 987.529 J
Color 3038	986.563 J / 987.535 J
Color 3135	986.525 A
Spectra 3201	987.527 A
Spectra 3205	987.520 A

NORDMENDE

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2305/87/40
F15/F16 Mono

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Chassisvarianten

Die Mono-Fernsehgeräte wurden beginnend mit dem Chassis F 15-01 (110°-Bildröhre) und F 16-01 (90°-Bildröhre) gefertigt. Während der Serie wurden die Geräte auf die Variante F 15-02 und F 16-02 umgestellt. Unterschiedsmerkmal ist ein geändertes Leiterplatten-Layout (Erzeugung der Spannung U 4' 13 V). Die Geräte Spectra 3201 und Spectra 3205 wurden gleich beginnend mit dem Chassis 02 gefertigt.
Bei der Chassisvariante F 15-03 und F 16-03 ist lediglich ein neues Chroma-Video-Modul eingebaut worden. Da alle anderen Teile gleich geblieben sind, ist für diese Chassisvariante nur das neue Chroma-Video-Modul in diesem Chassisbuch abgebildet.
Bei der Ersatzteilbestellung und bei der Schaltbildzuordnung sind unbedingt diese Varianten zu beachten. Die Varianten sind an dem Aufdruck auf der Lötseite des Chassis bei der Antennenbuchse zu erkennen. Aufdruck „Chassis 01" bei F 15-01/F 16-01, „Chassis 02" bei F 15-02/F 16-02 und „Chassis 03" bei F 15-03/F 16-03.

Varianti di telaio

All'inizio i televisori Mono sono stati fabbricati con il telaio F 15-01 (cinescopio 110°) e F 16-01 (cinescopio 90°). Durante la serie gli apparecchi sono stati adattati per la variante F 15-02 e F 16-02. Il carattere distintivo è il lay-out modificato della piastra (generazione della tensione U 4' 13 V). Già dall'inizio i televisori Spectra 3201 e Spectra 3205 sono stati dotati del telaio 02.
Nel caso della variante di telaio F 15-03 e F 16-03 é stato incorporato soltanto un nuovo modulo cromatico video. Dato che tutte le altre componenti non abbiano cambiate, il manuale di servizio contiene soltanto l'illustrazione di questo nuovo modulo cromatico video.
Per l'ordinazione dei pezzi di ricambio come pure per l'attribuzione dello schema di collegamento è indispensabile tener conto di queste varianti. Le varianti sono riconscocibili per la scritta sul lato delle saldature del telaio accanto alla presa d'antenna. Scritta "Chassis 01" per F 15-01/F 16-01, "Chassis 02" per F 15-02/F 16-02 e "Chassis 03" per F 15-03/F 16-03.

Chassis-Variables

The early production run of the mono -colour TV-sets started with the chassis F 15-01 (110°CRT) and F 16-01 (90°CRT). During production run the chassis changed to the variables F 15-02 and F 16-02. The differences will be noticed in the change of the p.c.b. lay-out (producing of the voltage U 4' 13 V). The models Spectra 3201 and Spectra 3205 have been fitted with the chassis variable 02 from production start on.
The chassis variables F 15-03 and F 16-03 have been fitted only with a new chroma-video-module. Since all other components and parts remain identical only the new chroma-video-module will be added in this service manual.
Please pay attention to the fact of the different chassis variables when ordering spare parts or when filing the service manuals. Investigate the variantes on the p.c.b. printed side near the antenna socket. The following markings may be found: "Chassis 01" with F 15-01/F 16-01, "Chassis 02" with F 15-02/F 16-02 and "Chassis 03" with F 15-03/F 16-03.

Bedienungshinweise (Sender speichern)

1. Serienmäßig ausgestattete Geräte mit „Single-Standard"

Die Mono-Farbfernsehgeräte mit dem Chassis F 15 und F 16 können serienmäßig folgende Fernsehnormen empfangen:

PAL B/G (z. B. Bundesrepublik Deutschland, Schweiz, Österreich, Italien)
SECAM B/G (z. B. DDR)

Die Normenumschaltung erfolgt automatisch. Zum Einstellen der Sender kann entweder der Sendersuchlauf (Taste —►•) benutzt werden oder die direkte Kanaleingabe.

Für die Kanaleingabe ist die Taste «**C**» so lange zu drücken, bis -- im Display erscheint. Falls das Display **C-** anzeigt, handelt es sich um ein Gerät mit „Multistandard" (siehe Punkt 2). Wenn -- erscheint, dann mit den Tasten «**1**...**10**» die Kanalnummer eingeben. (Die Taste «**10**» ist für die Ziffer Null zu benutzen. Bei den Kanälen 2-9 ist zuerst die Taste «**10**» zu drücken und dann die Kanalnummer).

Zum Speichern die gewünschte Programmtaste so lange drücken, bis der Punkt im Display nicht mehr blinkt.

Beispiel; Kanal 32 auf Programmtaste 1: «**C, 3, 2, 1**». Jeder Befehl muß innerhalb von 4 Sekunden ausgeführt werden! Falls nicht, ist die komplette Eingabe zu wiederholen.

Zur Eingabe von **Kabel-Kanälen** ist nach dem Drücken der Taste «**C**» (-- muß erscheinen) die Taste «**C**» erneut zu drücken (**CC** erscheint). Anschließend ist die Kabel-Kanalnummer einzutippen.

Beispiel; Kabel-Kanal S 2 auf Programmtaste 3: «**C, C, 10, 2, 3**»

Es können bis zu 39 Sender gespeichert werden. Die Programmplätze 11-39 werden wie folgt gewählt:

z. B. Programm 11: Taste **10, 1**
Programm 23: Taste **10, 10, 3**
Programm 39: Taste **10, 10, 10, 9**

Die Programmplätze 10, 20 und 30 sind für die Wiedergabe eines Videorecorders vorgesehen, bei denen die Zeitkonstante auf Recorder-Wiedergabe umgeschaltet wird.

2. Geräte mit „Multistandard"

Die Mono-Farbfernsehgeräte mit dem Chassis F 15 und F 16 können auf „Multistandard" (zusätzliche Normen NTSC und SECAM L) nachgerüstet werden. Bei diesen Geräten werden die verschiedenen Fernsehnormen bei der direkten Kanalwahl angewählt (nicht bei Sendersuchlauf). Dazu die Taste «**C**» so lange drücken, bis **C-** im Display erscheint. Erscheint --, dann handelt es sich um ein Gerät mit „Single-Standard" oder es ist nicht auf „Multistandard" programmiert worden (siehe Abschnitt „Service-Mode"). Erscheint **C-**, dann mit einer der Zifferntasten die Norm wählen:

Istruzioni per l'uso (memorizzazione delle emittenti)

1. Televisori dotati di serie con "Single-Standard"

I televisori a colori Mono con il telaio F 15 o F 16 sono muniti in serie per ricevere le seguenti norme televisive:

PAL B/G (ad esempio: Rep. Fed. Tedesca, Svizzera, Austria, Italia)
SECAM B/G (ad esempio Rep. Dem. Tedesca)

La commutazione da uno standard all'altro è automatica. Per la sintonizzazione dell'emittente si può utilizzare la ricerca automatica delle stazioni (tasto —►•) o selezionare direttamente il canale. In quest'ultimo caso, premere il tasto «**C**» finquando -- appare sul display. Se il display visualizza **C-** si tratta di un televisore "Multistandard" (vedi il punto 2). Se -- appare sul display si può selezionare il numero del canale mediante i tasti «**1**...**10**» (il tasto «**10**» dovrà essere utilizzato per la cifra "zero"; per programmare i canali 2-9 bisogna anzitutto premere il tasto «**10**» e poi selezionare il numero del canale).

Per la memorizzazione, premere il tasto di programma desiderato finquando il punto cessa di lampeggiare sul display. Esempio: per associare il canale 32 al tasto di programma 1 bisogna premere i tasti «**C, 3, 2, 1**». Non lasciar trascorrere più di 4 secondi tra l'azionamento di due tasti, altrimenti si dovrà ripetere la programmazione.

Per la programmazione di **canali trasmessi via cavo** bisogna azionare due volte il tasto «**C**» (il display deve visualizzare **Ch--** dopo il primo azionamento e **CC--** dopo il secondo) e poi selezionare il numero del canale. Esempio: per associare il canale TV-cavo S2 al tasto di programma 3 bisogna premere i tasti «**C, C, 10, 2, 3**».

Si possono memorizzare fino a 39 emittenti. Procedura per la selezione delle posizioni programmabili 11-39 (esempio):

programma 11: tasti **10** e **1**
programma 23: tasti **10, 10** e **3**
programma 39: tasti **10, 10, 10** e **9**

Le posizioni programmabili 10, 20 e 30 sono previste per la riproduzione da un videoregistratore (la loro costante di tempo è commutata per riproduzione da registratori).

2. Apparecchi "Multistandard"

I televisori a colori Mono con il telaio F 15 o F 16 possono esser corredati per "Multistandard" (norme addizionali NTSC e SECAM L). Con questi modelli diversi standard TV vengono impostati mediante selezione diretta del canale (non con la ricerca automatica delle stazioni). Perciò, premere il tasto «**C**» finquando il display visualizza **C-**. Se appare --, si tratta di un televisore "Single-Standard" o che non è stato programmato per "Multistandard" (vedi il capitolo "Modo Service"). Dopo la visualizzazione di **C-**, lo standard desiderato può essere selezionato mediante uno dei tasti numerici (vedi tavola pagina 4):

Operating Instructions (Channel storage)

1. Series fitted "Single-Standard" sets

The mono-CTV-sets fitted with the chassis F 15 and F 16 are capable of receiving the following TV-standards:

PAL-B/G (e. g. Federal Republic of Germany, Switzerland, Austria, Italy).
SECAM-B/G (e. g. DDR)

Standard switch-over is carried out automatically. The channels can either be set by automatic search (button —►•) or direct channel-selection.

For channel-selection press button «**C**» until -- is being displayed. In case, only a **C-** is being displayed then the set is a model with "Multi-Standard" (see point 2). When the -- appears set the channel number with the buttons «**1**...**10**». (Set the zero with button number «**10**». Set a zero with button «**10**» in front of each channel-number 2...9 and then the channel-number).

For storage of the desired channel press the program-button until the displayed dot stops to blink.

Sample; select channel 32 on program-place 1: «**C, 3, 2, 1**». Each command has to be carried out within 4 seconds! If not, the complete input has to be repeated.

For selection of **"Cable-Channels"** it is required, to press button «**C**» (-- must be indicated) and «**C**» be pressed again so (**CC** is indicated). Followed by the selection of the cable-channel number.

Sample; Cable-channel S 2 on program no. 3: «**C, C, 10, 2, 3**».

It is possible to store up to 39 channels. The program-places 11...39 are being selected as follows:

e. g. program 11: button **10, 1**
program 23: button **10, 10, 3**
program 39: button **10, 10, 10, 9**

The program places 10, 20 and 30 are reserved for AV-playback with a video-recorder. Only in this channels will the time-constant be switched on for video-playback.

2. Sets with "Multi-Standard"

The mono-CTV-sets containing the chassis F 15 and F 16 can be extended to "Multi-Standard" function (additionally NTSC and SECAM L standard). With these sets the different TV-standards are being selected during direct channel selection (not with automatic channel search). Press the button «**C**» until the display shows **C-**. In case -- is being displayed, then the set is a model having "Single-Standard" or the set has not been programmed for "Multi-Standard" (see section "Service-Mode"). If **C-** is displayed, then select the standard with one of the buttons «**1**...**5**» (see table on page 4).

Taste	Norm	Display	
		Standardkanäle	Kabel-Kanäle
1	PAL B/G (z. B. Bundesrepublik Deutschland, Schweiz, Österreich, Italien) SECAM B/G (z. B. DDR) NTSC (amerikanische Sender)	**CP**	**cP**
2	SECAM L (z. B. Frankreich)	**CF**	**CF**
Für Sonderfälle 4	SECAM L-Sendungen auf B/G-Kanälen	**FC**	**Fc**
5	PAL-Sendungen auf französischen Kanälen (für zukünftige Anwendungen)	**PC**	**PC**

Tasto	Standard	Display	
		Canali standard	Canali TV-cavo
1	PAL B/G (ad esempio Rep. Fed. Tedesca, Svizzera, Austria, Italia) SECAM B/G (ad esempio Rep. Dem. Tedesca) NTSC (emittenti americane)	**CP**	**cP**
2	SECAM L (ad esempio Francia)	**CF**	**CF**
Casi speciali **4**	emissioni SECAM L su canali B/G	**FC**	**Fc**
5	emissioni PAL su canali francesi (per applicazioni future)	**PC**	**PC**

Button	Standard	Display	
		Standard Channels	Cable Channels
1	PAL B/G (e.g. Federal Republik of Germany, Switzerland, Austria, Italy) SECAM-B/G (e.g. DDR) NTSC (American transmitters)	**CP**	**cP**
2	SECAM-L (e.g. France)	**CF**	**CF**
For special service **4**	SECAM-L transmission on B/G-channels	**FC**	**Fc**
5	PAL transmission on French channels (for future applications)	**PC**	**PC**

Danach die Kanalziffer eingeben. Zum Speichern des Senders die gewünschte Programmtaste so lange drücken, bis im Display der Punkt nicht mehr blinkt.
Beispiel PAL, Kanal 42 auf Programmplatz 2: **«C, 1, 4, 2, 2»**. Zwischen zwei Bedienungsschritten darf nicht länger als 4 Sekunden gewartet werden, sonst muß der Vorgang von Anfang an wiederholt werden.
Zum Anwählen der **Kabelkanäle S1 – S20** ist die Taste «C» nach der Normwahl erneut zu drücken.
Beispiel SECAM L, Kanal S12 auf Programmplatz 8:
«C, 2, C, 1, 2, 8».

Service-Hinweise

1. Geräterückwand abnehmen (Color 3031/3035/3135 Spectra 3205)

Entrare poi il numero del canale. Per memorizzare la stazione, premere il relativo tasto di programma finquando il punto cessa di lampeggiare sul display.
Esempio: per associare il canale 42 PAL alla posizione programmabile 2 bisogna premere **«C, 1, 4, 2, 2»**. Non lasciar trascorrere più di 4 secondi tra l'azionamento di due tasti, altrimenti si dovrà ripetere la programmazione.
Per impostare i **canali trasmessi via cavo S1 – S20** si deve premere nuovamente il tasto «C» dopo la selezione dello standard.
Esempio: per associare il canale S12 SECAM L alla posizione programmabile 8 bisogna premere **«C, 2, C, 1, 2, 8»**.

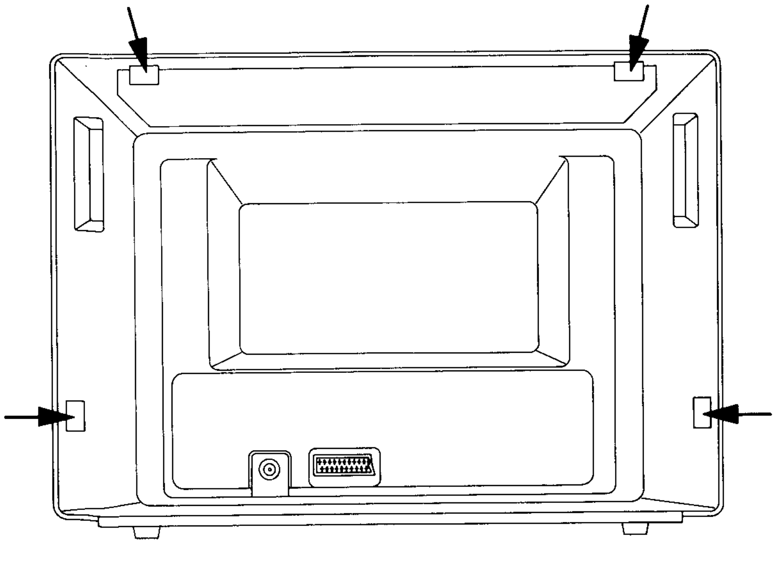
Istruzioni per i servizi tecnici

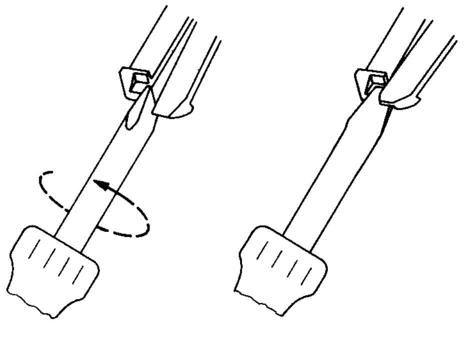
1. Rimuovere la parete posteriore dell'apparecchio (Color 3031/3035/3135 Spectra 3205)

Afterwards select the channel-numbers. For storage of the channel press the desired program button until dot stops blinking.
Sample PAL, channel 42 onto program-place 2 **«C, 1, 4, 2, 2»**. Each command has to be carried out within 4 seconds, otherwise the complete input has to be repeated.
For selection of the **cable-channels S1 . . . S20** the button «C» has to be pressed again after standard selection.
Sample SECAM L, channel S12 onto program-place 8:
«C, 2, C, 1, 2, 8».

Service-Instructions

1. Rear-cover removal (Color 3031/3035/3135 Spectra 3205)

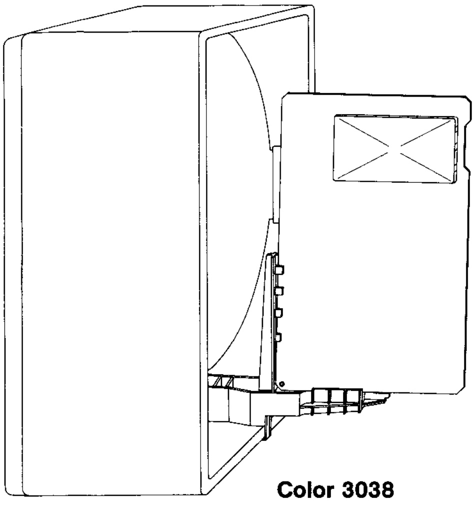


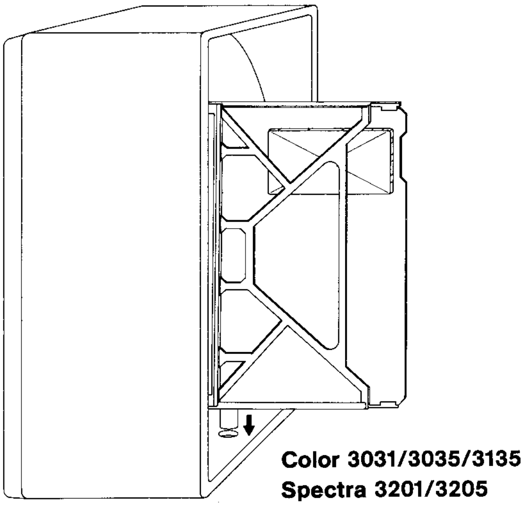


2. Service-Stellung

2. Posizione per servizio assistenza

2. Service-Position





3. Service-Mode

Der „Service-Mode" ist eine Betriebsart des Fernsehgerätes, bei der der Techniker das Programm des Bedienteil-Mikroprozessors in einigen Punkten beeinflussen kann. Dieses ist erforderlich:

a) nach dem Wechseln des IC's MDA 2061, Position IR 73 (EEPROM),
b) zum Umprogrammieren des Gerätes von „Single-Standard" auf „Multistandard",
c) zum Umschalten des Display's von deutschen auf internationalen (englischen) Funktionssymbolen.

Zum Einschalten des „Service-Modes" ist das Gerät zuerst mit dem Netzschalter auszuschalten. Dann die beiden Lautstärketasten «+» und «—» **am Fernsehgerät** drücken und gleichzeitig das Gerät mit dem Netzschalter wieder einschalten. Die Lautstärketasten so lange gedrückt halten, bis das Display aufleuchtet. Nach dem Loslassen der Tasten erscheint nach ca. 8 Sekunden die Anzeige -·. Wenn nicht, ist der Vorgang von Anfang an zu wiederholen. Erscheint im Display -·, dann können mit der Fernbedienung folgende Funktionen umgeschaltet werden. Im Display wird durch Aufleuchten von einzelnen Segmenten der jeweilige Funktionszustand angezeigt:

3. Modo "Service"

L'impostazione del televisore sul modo "Service" permette al tecnico di modificare alcuni punti del programma registrato nel microprocessore del tuner. Queste operazioni sono necessarie

a) dopo la sostituzione di un circuito integrato MDA 2061, posizione IR 73 (EEPROM);
b) per la programmazione del modo "Multistandard" in un apparecchio programmato per "Single-Standard";
c) per la visualizzazione sul display di simboli funzionali internazionali (inglesi) al posto di quelli tedeschi.

Per attivare il modo "Service" bisògna anzitutto disinserire l'apparecchio azionando l'interruttore di rete. Premere poi i due tasti di regolazione volume «+» e «—» **sul televisore** e riaccendere contemporaneamente l'apparecchio mediante l'interruttore di rete. Attendere poi che il display si sia acceso e rilasciare i tasti di regolazione del volume: dopo circa 8 secondi deve apparire il messaggio -·. Nel caso contrario si dovrà ripetere l'operazione dall'inizio. Le commutazioni seguenti possono essere effettuate mediante il telecomando quando il messaggio -· è visualizzato sul display. La funzione impostata viene evidenziata sul display mediante l'accensione di singoli segmenti:

3. Service-Mode

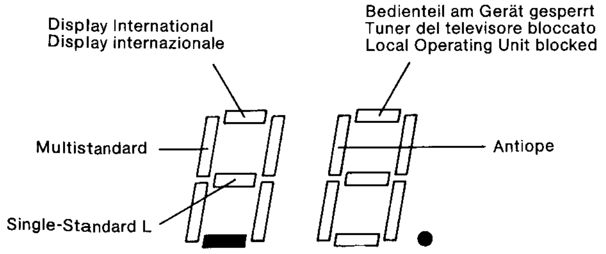
The "Service-Mode" is an operational feature of the set, in which the technician has the possibility to change the program of the microprocessor of the operating unit in a few oparations:

a) After replacement of the IC MDA 2061, position IR 73 (EEPROM),
b) For programming of the set from "Single-Standard" to "Multi-Standard",
c) To switch-over the display characters from German to international (English) characters.

In order to switch the set into "Service-Mode" it is necessary to switch the set off with the mains-switch. Then press both local volume buttons «+» and «—» **on the set** simultaneously and additional switch the set on again with the mains-switch and keep the volume buttons depressed until the display is active. Let loose the volume buttons. After 8 seconds the display indicates -·. If not, repeat the foregoing procedure. If -· is being displayed, then the following functions can be switched over. Single segments of the display show the corresponding function condition:

Taste	Normalfunktion	Funktion im „Service-Mode"
1	Programm 1	Display International (Englisch)
2	Programm 2	Display Deutsch
3	Programm 3	Single-Standard B/G
4	Programm 4	Single-Standard L (Frankreich)
5	Programm 5	Multistandard
6	Programm 6	Display-Test (für ca. 5 Sek.)
7	Programm 7	Antiope Ein (Videotext Aus)
8	Programm 8	Videotext Ein (Antiope Aus)

Tasto	Funzione normale	Funzione in modo "Service"
1	Programma 1	Display internazionale (inglese)
2	Programma 2	Display tedesco
3	Programma 3	Single-Standard B/G
4	Programma 4	Single-Standard L (Francia)
5	Programma 5	Multistandard
6	Programma 6	Controllo display (per circa 5 sec.)
7	Programma 7	Antiope acceso (Televideo spento)
8	Programma 8	Televideo acceso (Antiope spento)


Display International
Display internazionale
Bedienteil am Gerät gesperrt
Tuner del televisore bloccato
Local Operating Unit blocked
Multistandard
Antiope
Single-Standard L

Button	Normal Function	Function in "Service-Mode"
1	Program 1	Display International (English)
2	Program 2	Display German
3	Program 3	Single-Standard B/G
4	Program 4	Single-Standard L (France)
5	Program 5	Multi-Standard
6	Program 6	Display-Test (approx 5 sec.)
7	Program 7	Antiope On (Teletext Off)
8	Program 8	Teletext On (Antiope Off)

Nach dem Umschalten der Funktionen ist es unbedingt erforderlich, das Gerät mit der Fernbedienung auszuschalten. Nur dann werden die gewünschten Funktionen gespeichert und der „Service-Mode" ausgeschaltet.

Spegnere sempre il televisore mediante il telecomando dopo la commutazione delle funzioni: solo cosi si può memorizzare la funzione desiderata e disinserire il modo "Service".

After the function has being switched to it's desired mode it is necessary to switch the set off by the remote control. Thus, the desired functions are being stored and simultaneously the "Service-Mode" is switched off.

4. Austausch des IC's MDA 2061, Position IR 73 (EEPROM)

Nach dem Einbau eines neuen MDA 2061 verhält sich das Fernsehgerät wie folgt:

a) Das Display zeigt deutsche Funktionssymbole.
b) Alle Programmspeicher haben Kanal Ch 00 gespeichert.
c) PAL B/G und SECAM B/G (DDR) können empfangen werden = Single-Standard [nicht NTSC und SECAM L (Frankreich) = Multistandard].

Es müssen deshalb alle Sender neu gespeichert werden. Bei allen Geräten, die für Multistandard oder SECAM L (Frankreich) nachgerüstet wurden, muß unbedingt im „Service-Mode" auf Multistandard umgeschaltet werden (siehe Abschnitt „Service-Mode"). Diese Geräte sind an dem Submodul AM/FM 5101 **(Abb. 1)**, zu erkennen, welches in das Tonmodul eingelötet ist.

Soll das Display internationale (englische) Funktionssymbole anzeigen, dann erfolgt die Umschaltung ebenfalls im „Service-Mode".

4. Sostituzione del circuito integrato MDA 2061, posizione IR 73 (EEPROM)

Funzioni impostate nel televisore dopo il montaggio di un nuovo circuito integrato MDA 2061:

a) Il display visualizza i simboli tedeschi.
b) Tutte le memorie di programma hanno memorizzato il canale "Ch 00".
c) Si possono ricevere emissioni a standard PAL B/G e SECAM B/G (Rep. Dem. Tedesca) = Single-Standard [non NTSC e SECAM L (Francia) = Multistandard].

Tutte le stazioni devono quindi essere nuovamente memorizzate. I televisori allestiti per "Multistandard" o SECAM L (Francia) devono essere assolutamente commutati su "Multistandard" in modo "Service" (vedi il capitolo "Modo Service"). Questi televisori sono caratterizzati rispettivamente dal modulo AM/FM 5101 **(fig. 1)**, sul quale è saldato il modulo audio.

Se il display deve visualizzare dei simboli funzionali internazionali (inglesi), anche questa commutazione viene effettuata in modo "Service".

4. Replacement of the IC MDA 2061, in position IR 73 (EEPROM)

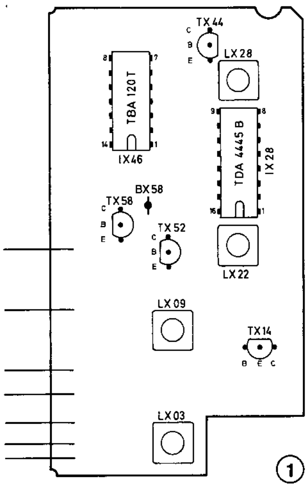
After replacement of the MDA 2061, the set will react as follows:

a) The display shows German function symbols.
b) The program storages have all stored Ch 00.
c) PAL B/G, and SECAM B/G (DDR) can be received in "Single-Standard", not NTSC and SECAM L (France) = Multi-Standard.

Thus, it is necessary that all transmitters are being stored newly again. With all sets which have been modified to Multistandard or to SECAM L (France) it is required to switch - during "Service-Mode" - over to Multi-Standard (see section "Service-Mode").

These sets can be recognized by the sub-module AM/FM 5101 **(fig. 1)** which is soldered onto the sound module.

When the function symbols should be displayed international (English), then the switch-over has to be carried out in the "Service-Mode".



①

5. Zeilentrafo wechseln

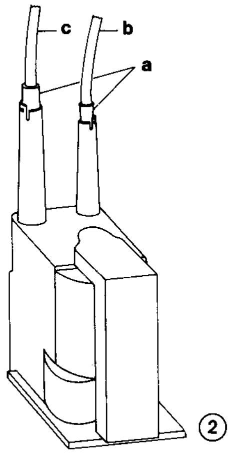
Beim Wechseln des Zeilentrafos die beiden Kabelhalter **(a)**, das Fokuskabel **(b)** und das Hochspannungskabel **(c)** abziehen, da neue Zeilentrafos ohne Halter und Kabel geliefert werden.

5. Cambiamento del trasformatore di riga

Cambiando il trasformatore di riga, togliere i due fermacavi **(a)**, il cavo fuoco **(b)** e il cavo alta tensione **(c)** dato che i nuovi trasformatori di riga vengono forniti senza supporti e cavi.

5. Line transformer replacement

The new replacement transformer is supplied without the cable clips and cables, therefore keep the cable clips **(a)**, the focus cable **(b)** and the EHT-cable **(c)** from the original transformer.



②

Schaltbildhinweise

U1 7V ▷ zum Verbraucher

▶ U1 7V von der Spannungsquelle

△1 ... △21

Anschlüsse der Euro-AV-Buchse.

◇1 ... ◇13

Anschlüsse der Stiftleiste BV 06 (Videotext).

◇14 ... ◇17

Anschlüsse der Stiftleiste BV 07 (Videotext).

D 1 ... Z 7

Meßpunkte auf den gedruckten Platinen.

X = nicht angeschlossen

⚠ Sicherheitszeichen

Diese Bauteile sind bei Reparaturen nur durch die vom Hersteller geprüften und angegebenen Originalteile zu ersetzen, um die vorgesehene Betriebssicherheit zu gewährleisten.

Alle nicht gekennzeichneten Dioden 1 N 4148

Achtung!

Bildröhre und Ablenksystem sind eine festverbundene Einheit und vom Werk optimal eingestellt.

Folgende Punkte sind unbedingt zu beachten:

Keine Veränderungen der Halskomponenten vornehmen.

Keine versiegelten Schrauben am Ablenksystem lösen.

Jeglichen Zugriff (Transport) an den Halskomponenten unterlassen.

Die in diesem Gerät entstehende Röntgenstrahlung ist ausreichend abgeschirmt. Beschleunigungsspannung: max. 26,5 kV.

Änderungen vorbehalten.

Indicazione sullo schema

U1 7V ▷ verso utilizzatore

▶ U1 7V dalla sorgente di tensione

△1 ... △21

Collegamenti della presa Peritelevisione.

◇1 ... ◇13

Colleg. della lista presa BV 06 (Televideo).

◇14 ... ◇17

Colleg. della lista presa BV 07 (Televideo).

D 1 ... Z 7

Punti di misura sulle piastre strampate.

X = non collegate

⚠ Contrassegno di sicurezza.

Nel caso di riparazione questi elementi devono venire sostituito soltanto con delle parti di ricambio originali controllati e designati da parte del fabbricante per garantire la sicurezza di funzionamento prevista.

Tutti i diodi non contressegnati 1 N 4148.

Attenzione!

Il cinescopio ed il giogo di deflessione formano un'unità solidamente collegata e sono regolati in modo ottimo dalla fabbrica.

E'indispensabile osservare le istruzioni seguenti:

Non effettuare alcuna modifica sui componenti a collare.

Non togliere le viti sigillate sul giogo di deflessione.

Per il trasporto mai sollevare il cinescopio dal giogo.

Le radiazioni X generate in questo televisore sono sufficientemente schermate. Tensione di accelerazione: max. 26,5 kV.

Con riserva di modifiche.

Circuit notes

U1 7V ▷ to load circuit

▶ U1 7V from voltage source

△1 ... △21

Connections of the Eurosocket.

◇1 ... ◇13

Connections of the socket strip BV 06 (Teletext).

◇14 ... ◇17

Connections of the socket strip BV 07 (Teletext).

D 1 ... Z 7

Test points on the printed boards.

X = not connected

⚠

Components designated by the safety symbol should, when necessary for repair, only be replaced by original parts produced and proofed by the manufacturer. Only then can the original operational safety be guaranteed.

Diodes not designated all 1 N 4148

Note!

Cathode ray tube and deflection system are a complete fixed unit which is optimally adjusted at the factory.

It is essential that the following points be observed:

Do not alter the position of the neck components.

Do not slaken any sealed screws.

Do not lift or hold the unit by the neck components.

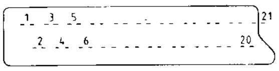
The X-ray radiation generated by this receiver is adequately screened. Acceleration voltage: max. 26,5 kV.

Subject to modification.

△ = Euro-AV-Buchse
Presa Peritelevisione
Eurosocket

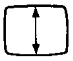
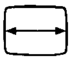
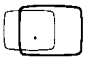
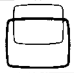
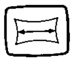
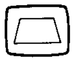
△1	NF/AF 'R' ○→ BF 'D' 0,5 V RMS	△12	X
△2	NF/AF 'R' ⊖ BF 'D' 0,5 V RMS	△13	⊥ Video R
△3	NF/AF 'L' ○→ BF 'S' 0,5 V RMS	△14	X
△4	⊥ NF/AF BF	△15	Video R ⊖ 0,7 V RMS
△5	⊥ Video B	△16	Blanking ⊖ Spegnim. Video
△6	NF/AF 'L' ⊖ BF 'S' 0,5 V RMS	△17	⊥ Video
△7	Video B ⊖ 0,7 V RMS	△18	⊥ Blanking Spegnimento
△8	Mode AV ≙ 12 V	△19	Video ○→ 1 V_{pp}/75 Ω
△9	⊥ Video G/V	△20	Video ⊖ 1 V_{pp}/75 Ω
△10	X	△21	⊥ Chassis Telaio
△11	Video G/V ⊖ 0,7 V RMS		V RMS = V_{eff} V_{pp} = V_{ss}

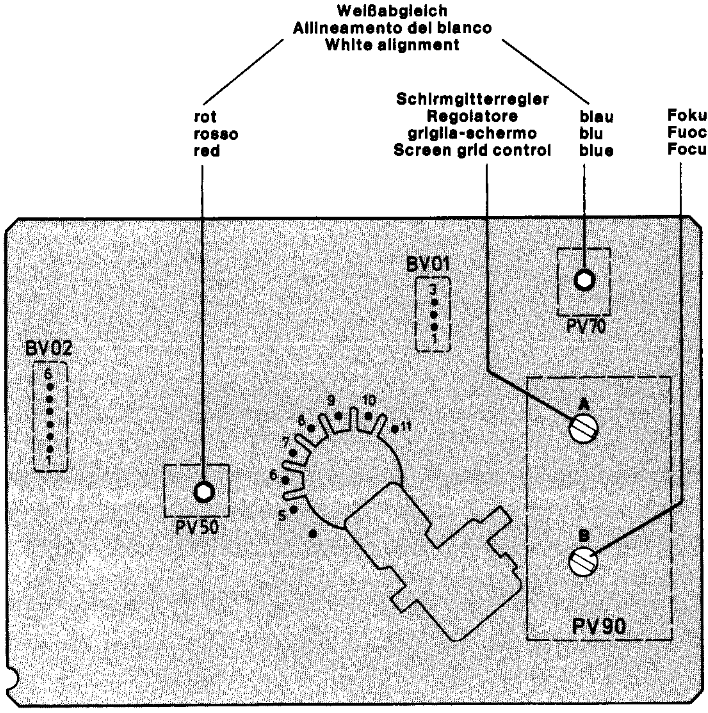
Euro-AV-Buchse
Presa Peritelevisione
Eurosocket



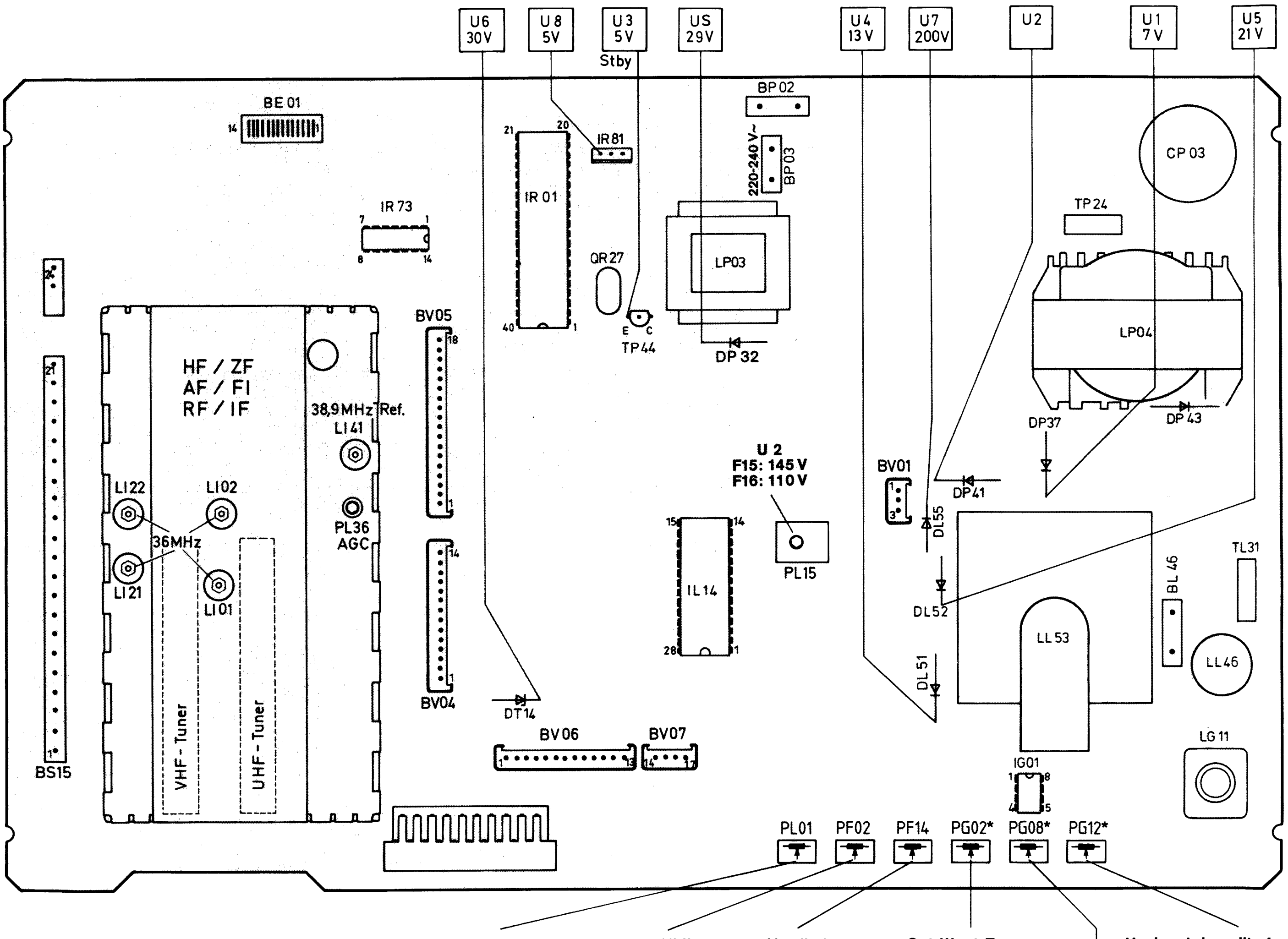
Anschlußseite / Lato collegamento / Connection side

Einstellarbeiten / Operazioni di messa a punto / Initial adjustment

Einstellung Taratura Adjustment	Position Posizione	einstellen auf regolare su adjust to	Hinweise Avvisi Notes
Hauptspannung Tensione principale Principale voltage	PL 15	F15: 145 V ± 1 V F16: 110 V ± 1 V	
Vertikalamplitude Ampiezza verticale Vertical amplitude	PF 14		
Horizontalamplitude Ampiezza orizzontale Horizontal amplitude	PG 12		nicht bei non con F16 not with
Horizontalposition Posizione orrizontale Horizontal position	PL 01		nach Einstellung Vertikalposition korrigieren dopo la taratura correggere la posizione verticale after setting, readjust vertical position
Vertikalposition Posizione verticale Vertical position	PF 02		
Ost-West-Amplitude Ampiezza est/ovest East-West amplitude	PG 08		nicht bei non con F16 not with
Ost-West-Trapez Trapezi est/ovest East-West trapeze	PG 02		nicht bei non con F16 not with
Schirmgitterspannung Tensione griglia schermo Screen grid voltage	PV 90 A	Katode mit höchster Spannung auf 185 V– einstellen Regolare il catodo con la tensione più alta su 185 V– Adjust the cathode with the highest voltage to 185 V DC	◑ + ☼ = min. Emitter messen Emittitore misurare TV 50, TV 60, TV 70 measure
Fokusspannung Tensione focale Focus voltage	PV 90 B	Optimale Bildschärfe Definizione ottimale dell'immagine Optimum sharpness	
Weißabgleich Taratura del bianco White alignment	PV 50 PV 70		FUBK-Sendertestbild Monoscopio del trasmettitore Philips-test pattern ◑ + ☼ = normal


Weißabgleich
Allineamento del bianco
White alignment
rot
rosso
red
Schirmgitterregler
Regolatore
griglia-schermo
Screen grid control
blau
blu
blue
Fokus
Fuoco
Focus
BV01
BV02
PV70
PV50
PV90
A
B
3
1
6
1
5
6
7
8
9
10
11

Bildrohranschluß-Platine
Piastra zoccolo cinescopio 592.977
P.C.B. CRT socket
Lötseite – Lato saldature – Soldered side


U6 30V
U8 5V
U3 5V Stby
US 29V
U4 13V
U7 200V
U2
U1 7V
U5 21V
BE01
IR73
IR81
IR01
QR27
TP44
BP02
220-240 V~
BP03
LP03
DP32
CP03
TP24
LP04
DP37
DP43
BV05
BV04
HF / ZF
AF / FI
RF / IF
38,9MHz Ref.
LI41
LI22
LI02
36MHz
LI21
LI01
PL36 AGC
VHF - Tuner
UHF - Tuner
BS15
U 2
F15: 145 V
F16: 110 V
PL15
IL14
BV01
DP41
DL55
DL52
DL51
LL53
BL46
TL31
LL46
DT14
BV06
BV07
IG01
LG11
PL01
PF02
PF14
PG02*
PG08*
PG12*

Bildlage horizontal
Posizione dell'immagine orizzontale
Picture position horizontal

Vert. Bildlage
Posizione dell'immagine verticale
Picture position vert.

Vertikal-amplitude
Ampiezza verticale
Picture height

Ost-West-Trapez
Trapezi est-ovest
East-West-trapeze

Ost-West-Amplitude
Ampiezza est-ovest
East-West amplitude

Horizontalamplitude
Ampiezza orizzontale
Horizontal amplitude

Grundplatte
Piastra di base F 15, F 16
Basic P.C.B.
Bestückungsseite – Lato componenti – Component side

***nicht bei**
non con F16
not with

Abgleich Chroma-Video-Modul

1. PAL

PAL-Farbbalkensignal über den Anteneingang einspeisen.

1.1 PAL 4,43 MHz-Referenz-Oszillator

1.1.1 Eine Brücke von Pin 17 nach Pin 9 (Masse) des TDA 4556 einlöten. Dadurch wird die Farbe zwangsweise eingeschaltet und die Synchronisation des PAL-Referenz-Oszillators abgeschaltet.

1.1.2 Einen 1 kΩ-Widerstand von Pin 13 (+ 12 V) nach Pin 28 des TDA 4556 legen. Dadurch wird fest auf PAL geschaltet.

1.1.3 Mit dem Trimmer CC 12 auf möglichst langsames Durchlaufen der Farben einstellen.

1.1.4 Die Brücke und den 1 kΩ-Widerstand wieder entfernen.

1.2 PAL-Laufzeitdecoder

FuBK-Testbild anlegen, geringe Helligkeit einstellen. LC 17 (PAL-Phase) und PC 18 (PAL-Amplitude) wechselweise so einstellen, daß in den Unbuntfeldern (+ V ± U) bzw. im Farbbalken purpur keine Jalousieeffekte (Paarigkeit) auftreten.

1.3 4,43 MHz-Farbträger-Falle*

Oszilloskop mit dem Emitter von TV 60 auf der Bildrohranschluß-Platine verbinden. Mit LV 56 den 4,43 MHz-Farbträger auf Minimum einstellen.

1.4 5,5 MHz-Tonträger-Falle

Oszilloskop an den Emitter von TV 60 auf der Bildrohranschluß-Platine anschließen. Mit LV 64 Tonträger auf Minimium einstellen.

2. SECAM

SECAM-Farbbalkensignal über den Antenneneingang einspeisen.

2.1 Identifikation

Zum Großabgleich mit LC 14 Farbbalken auf flackerfreie Wiedergabe einstellen. Für den Feinabgleich ein extrem hochohmiges Voltmeter an Pin 21 des TDA 4556 anschließen. Es empfiehlt sich, die Spannung nicht gegen Masse zu messen, sondern gegen einen Spannungsteiler, dessen Anzapf auf ca. 6 V liegt. Mit LC 14 auf maximale Spannung abgleichen.

2.2 B-Y-Demodulator

Oszilloskop an Pin 3 des TDA 4556 (B-Y-Ausgang) anschließen. Mit LC 05 die farblosen Balken des Farbbalken-Testbildes auf das Niveau der Zeilenaustastlücke einstellen **(Abb. 1)**.

2.3 R-Y-Demodulator

Oszilloskop an Pin 1 des TDA 4556 (R-Y-Ausgang) anschließen. Mit LC 01 die farblosen Balken des Testbildes auf das Niveau der Zeilenaustastlücke einstellen **(Abb. 2)**.

2.4 Glockenfilter

SECAM-Signal videomäßig über die Euro-AV-Buchse (Pin 20) einspeisen. Oszilloskop an Pin 15 des TDA 4556 anschließen. Mit LC 23 gleiche Amplituden des Farbbalkensignals einstellen.

2.5 4,25 MHz-Farbträger-Falle*

Oszilloskop mit dem Emitter von TV 60 auf der Bildrohranschluß-Platine verbinden. Mit LV 57 den 4,25 MHz-Farbträger auf Minimum einstellen.

3. Kontrast (Spitzenweiß)*

Testbildgenerator anschließen und Grünfläche einspeisen. Oszilloskop an die Bildröhrenkatode Grün (Pin 6) anschließen. Mit der Fernbedienung Farbe auf den Wert 50 regeln, Helligkeit auf 50 und Kontrast auf 70. Mit PV 38 das Signal an der Bildröhre auf 60 Vss (Austastniveau bis Grün) einstellen.

4. Strahlstrom*

Mit Testbildgenerator Weißfläche einspeisen. Oszilloskop an die Bildröhrenkatode Grün (Pin 6) anschließen. Mit der Fernbedienung Farbe auf den Wert 50 regeln, Helligkeit auf 50 und Kontrast auf 99. Mit PV 44 das Signal an der Bildröhre auf 60 Vss einstellen.

***nur bei F 15-03/F 16-03**

Taratura del modulo crominanza video

1. PAL

Alimentare un segnale di barre di colore PAL attraverso l'entrata d'antenna.

1.1 Oscillatore di riferimento PAL 4,43 MHz

1.1.1 Saldare un ponticello dal pin 17 al pin 9 (massa) del TDA 4556. In questo modo, il colore viene inserito automaticamente mentre la sincronizzazione dell'oscillatore di riferimento PAL è disinserita.

1.1.2 Sistemare una resistenza da 1 kohm tra il pin 13 (+ 12 V) ed il pin 28 del TDA 4556. L'apparecchio è ora impostato per il modo PAL.

1.1.3 Mediante il trimmer CC 12 regolare in modo che il passaggio dei colori sia il più lento possibile.

1.1.4 Togliere la resistenza da 1 kohm e il ponticello.

1.2 Decoder tempo di transito PAL

Introdurre in antenna un segnale di prova colore. Regolare su bassa luminosità. Regolare alternativamente LC 17 (fase PAL) e PC 18 (ampiezza PAL) in modo tale che le zone acromatiche (+ V ± U) rispettivamente la barra di colore porpora non presentino l'effetto persiana (adoppiamento di linee).

1.3 Trappola portante cromoforica 4,43 MHz*

Collegare l'oscilloscopio all'emettitore di TV 60 sulla piastra collegamento del cinescopio. Regolare su minimo la portante cromoforica 4,43 MHz mediante LV 56.

1.4 Trappola portante audio 5,5 MHz

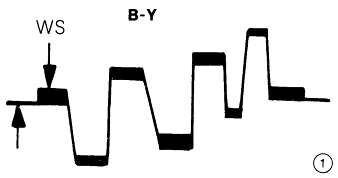
Collegare l'oscilloscopio all'emettitore di TV 60 trovandosi sulla piastra collegamento cinescopio. Regolare su minimo la portante audio con LV 64.

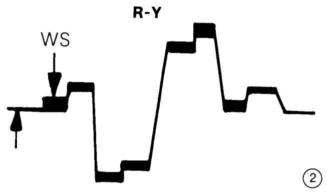
2. SECAM

Alimentare un segnale barra di colore SECAM attraverso l'entrata d'antenna.

2.1 Identificazione

Per la taratura grossolana, regolare la barra di colore con LC 14 in modo tale che la riproduzione sia esente dall'effetto di scintillamento. Per la taratura fine, bisogna collegare al piedino 21 del TDA 4556 un voltmetro a resistenza ohmica estremamente elevata. Consigliamo di non misurare la tensione verso massa ma invece verso un separatore di tensione la cui entrata è di circa 6 V. Allineare su tensione massima mediante LC 14.





2.2 Demodulatore B-Y
Collegare l'oscilloscopio al piedino 3 del TDA 4556 (uscita B-Y). Regolare con LC 05 le barre acromatiche del segnale di prova barre di colore in modo tale che corrispondino al livello della lacuna d'esplorazione di riga **(fig. 1)**.

2.3 Demodulatore R-Y
Collegare l'oscilloscopio al piedino 1 del TDA 4556 (uscita R-Y). Regolare con LC 01 le barre acromatiche del segnale di prova in modo tale che corrispondino al livello della lacuna d'esplorazione di riga **(fig. 2)**.

2.4 Filtro a campana
Alimentare in modo video il segnale SECAM attraverso la presa Peritelevisione (piedino 20). Collegare l'oscilloscopio al piedino 15 del TDA 4556. Effettuare la regolazione con LC 23 in modo tale che le ampiezze del segnale barre di colore siano analogiche.

2.5 Trappola portante cromoforica 4,25 MHz*
Collegare l'oscilloscopio all'emettitore di TV 60 sulla piastra collegamento del cinescopio. Regolare su minimo la portante cromoforica 4,25 MHz mediante LV 57.

3. Contrasto (Bianco di cresta)*
Collegare un generatore di segnali di prova ed introdurre in antenna un segnale verde. Collegare l'oscilloscopio al catodo verde del cinescopio (piedino 6). Regolare il colore e la luminisità sul valore 50, il contrasto sul valore 70 mediante il telecomando. Il segnale sul cinescopio deve esser regolato a 60 Vpp tramite PV 38 (livello d'esplorazione fino al verde).

4. Corrente di fascio*
Introdurre in antenna un segnale bianco mediante il generatore di segnali di prova. Collegare l'oscilloscopio al catodo verde del cinescopio (piedino 6). Regolare il colore e la luminosità sul valore 50, il contrasto sul valore 99 mediante il telecomando. Il segnale sul cinescopio deve esser regolato su 60 Vpp mediante PV 44.

***solo con F 15-03/F 16-03**

Alignment of Chroma - Video-Module

1. PAL
Apply PAL-colour bar test pattern into the antenna input socket.

1.1 PAL-Reference-Oscillator 4.43 MHz

1.1.1 Solder a wire bridge from pin 17 to pin 9 (ground) of TDA 4556. This puts the colour killer out of action and simultaneously also the synchronization of the PAL-reference oscillator.

1.1.2 Solder a 1 kΩ resistor from pin 13 (+12 V) to pin 28 of TDA 4556, this fixes PAL operation.

1.1.3 With trimmer CC 12 adjust the colour bars almost to beat-frequency.

1.1.4 Now remove the 1 kΩ resistor and the wire bridge.

1.2 PAL-delay-line decoder
Apply Philips-test pattern with low brightness level. Adjust LC 17 (PAL-phase) and PC 18 (PAL-amplitude) vice-versa, so that hannover-blinds do not occur in the complementary colour bars yellow, cyan and magenta.

1.3 4.43 MHz Colour sub-carrier trap*
Connect an oscilloscope-probe to the emitter of TV 60, positioned on the CRT-base plate. Align 4.43 MHz colour subcarrier to minimum with LV 56.

1.4 5.5 MHz sound trap
Connect an oscilloscope probe to the emitter of transistor TV 60, positioned on the CRT-base plate. Align LV 64 to minimum sound carrier.

2. SECAM
Apply a SECAM-colour-bar signal to antenna input socket.

2.1 Identification
For coarse balancing, set colour bars to flicker-free playback with LC 14. For fine tuning employ an extreme high-impedance voltmeter and connect to pin 21 of the TDA 4556. We recommend, to measure the voltage not against the ground, but on a voltage devider with a tapping connection at a level of 6 volts. With LC 14 adjust to maximum reading.

2.2 B-Y Demodulator
Connect the oscilloscope to pin 3 of TDA 4556 (B-Y output). With LC 05 set the monochrome (colourless) bars of the colour-bars test pattern signal to the same level as the line blanking interval (see **fig. 1**).

2.3 R-Y Demodulator
Connect oscilloscope to pin 1 of TDA 4556 (R-Y output). With LC 01 set the monochrome bars of the test pattern signal to the same level as the line blanking interval (see **fig. 2**).

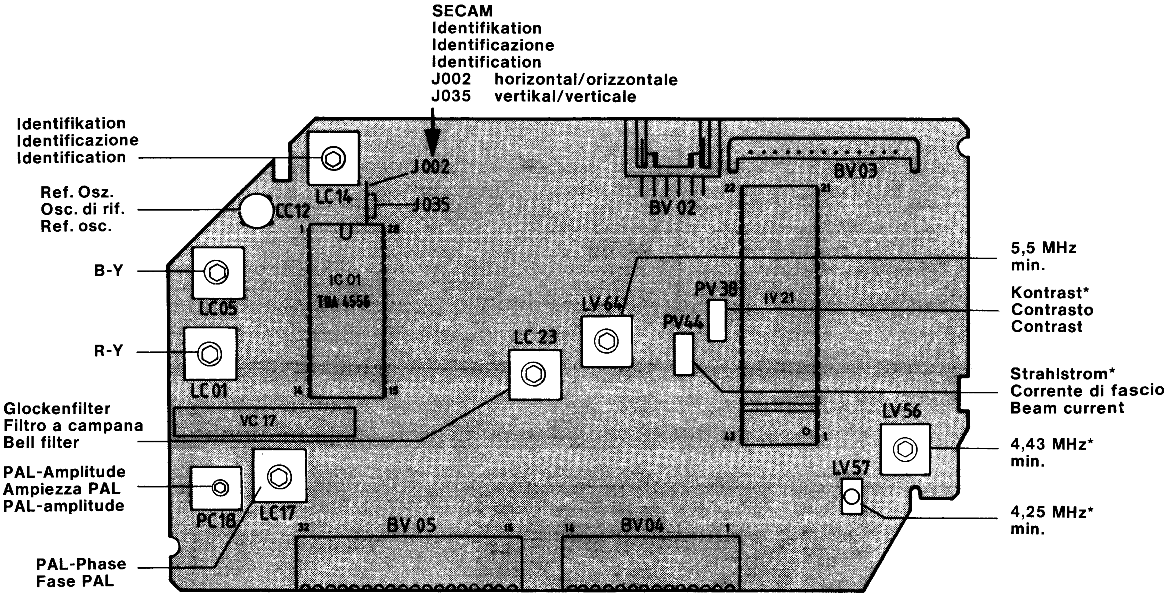
2.4 Bell filter
Apply a SECAM video signal into the SCART socket pin 20. Connect an oscilloscope to pin 15 of the TDA 4556. With LC 23 set the amplitudes of the different colour bars to same level.

2.5 4.25 MHz Colour sub-carrier trap*
Connect an oscilloscope-probe to the emitter of TV 60, positioned on the CRT-base plate. Align 4.25 MHz colour subcarrier to minimum with LV 57.

3. Contrast (peak white-level)*
Apply a green testpattern-signal to the antenna socket. Connect oscilloscope-probe to the green cathode (pin 6) of the CRT. With the remote control set the colour saturation to indicate the value 50, the brightness to 50 and the contrast to 70. With PV 38 set the CRT-signal to 60 Vpp (blanking to green level).

4. Beam current*
Apply a white testpattern-signal to the antenna socket. Connect an oscilloscope-probe to the green cathode (pin 6) of the CRT. With the remote control set the colour saturation to indicate the value 50, the brightness to 50 and the contrast to 99. With PV 44 set the CRT-signal to 60 Vpp.

***only with F 15-03/F 16-03**

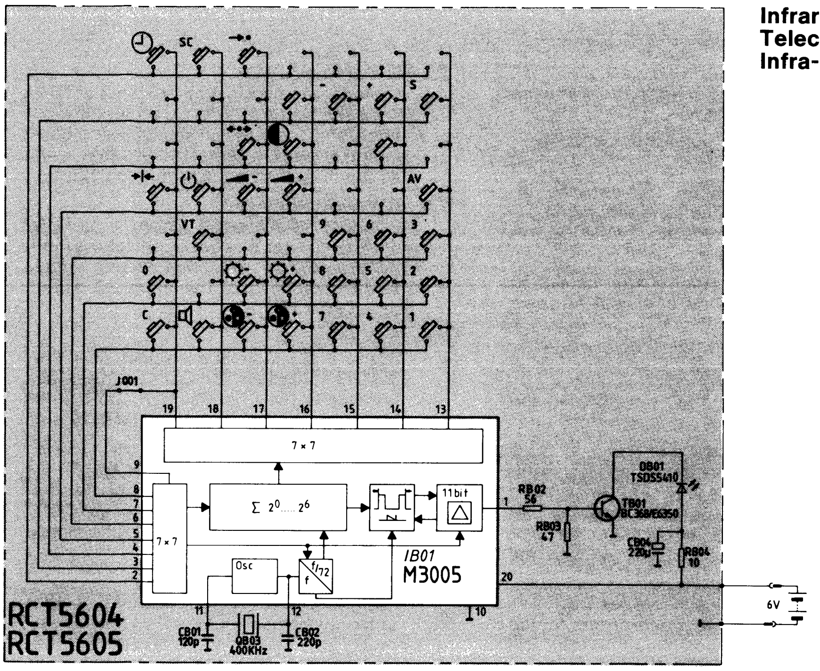


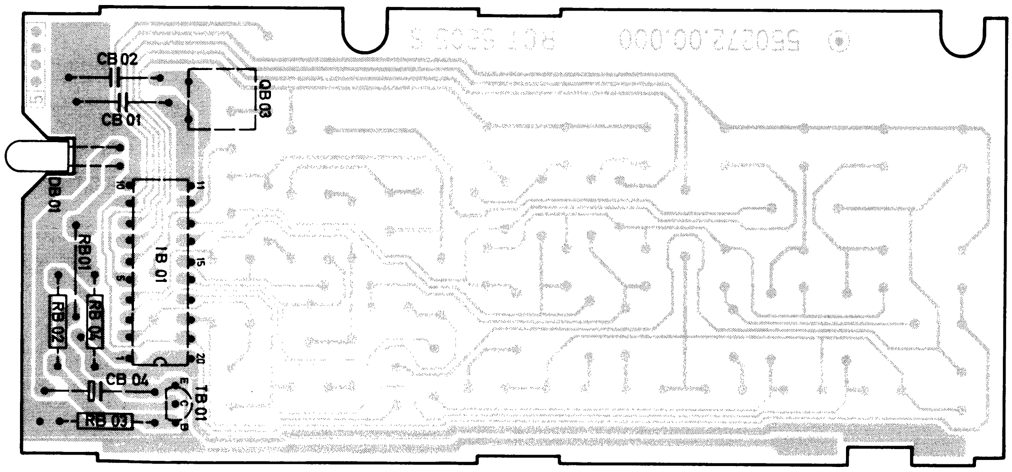
Chroma-Video-Modul
Modulo crominanza video 592.730
Chroma video module 592.780*
Bestückungsseite – Lato componenti – Component side

*nur bei
solo con F 15-03, F 16-03
only with

Infrarot-Fernbedienung
Telecomando infrarossi
Infra-red remote control

Computer Control 4
583.561

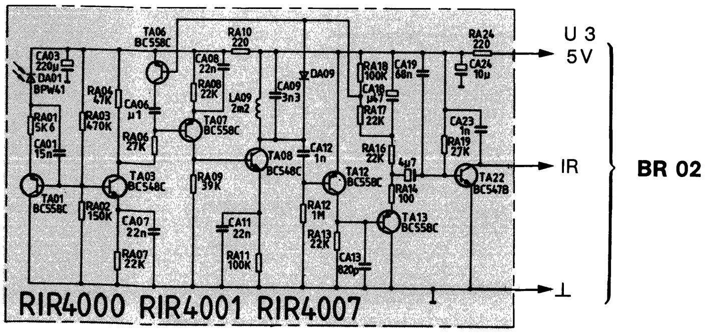

SC
VT
AV
J001
7×7
Σ 2⁰.....2⁶
11 bit
Osc
f/72
IB01
M3005
RB02 56
RB03 47
DB01 TSDS5410
TB01 BC368/E6350
CB04 220μ
RB04 10
6V
CB01 120p
DB03 400KHz
CB02 220p
RCT5604
RCT5605

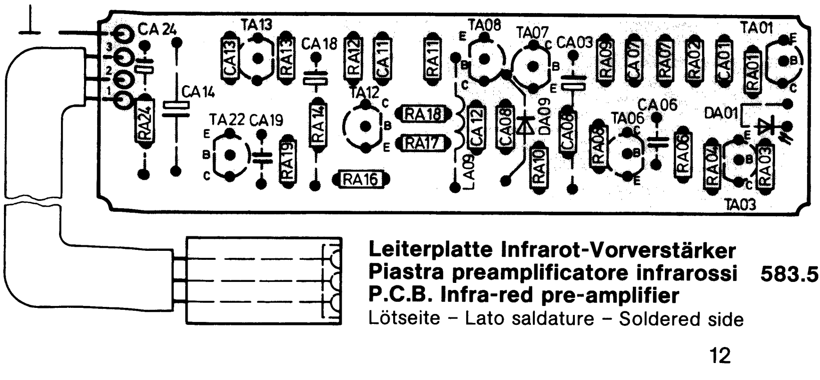

CB 02
CB 01
DB 03
DB 01
RB 01
RB 02
RB 04
IB 01
CB 04
TB 01
RB 03

Leiterplatte Infrarot-Fernbedienung
Piastra Telecomando infrarossi
P.C.B. Infra-red remote control

Computer Control 4
583.561
Lötseite – Lato saldature – Soldered side

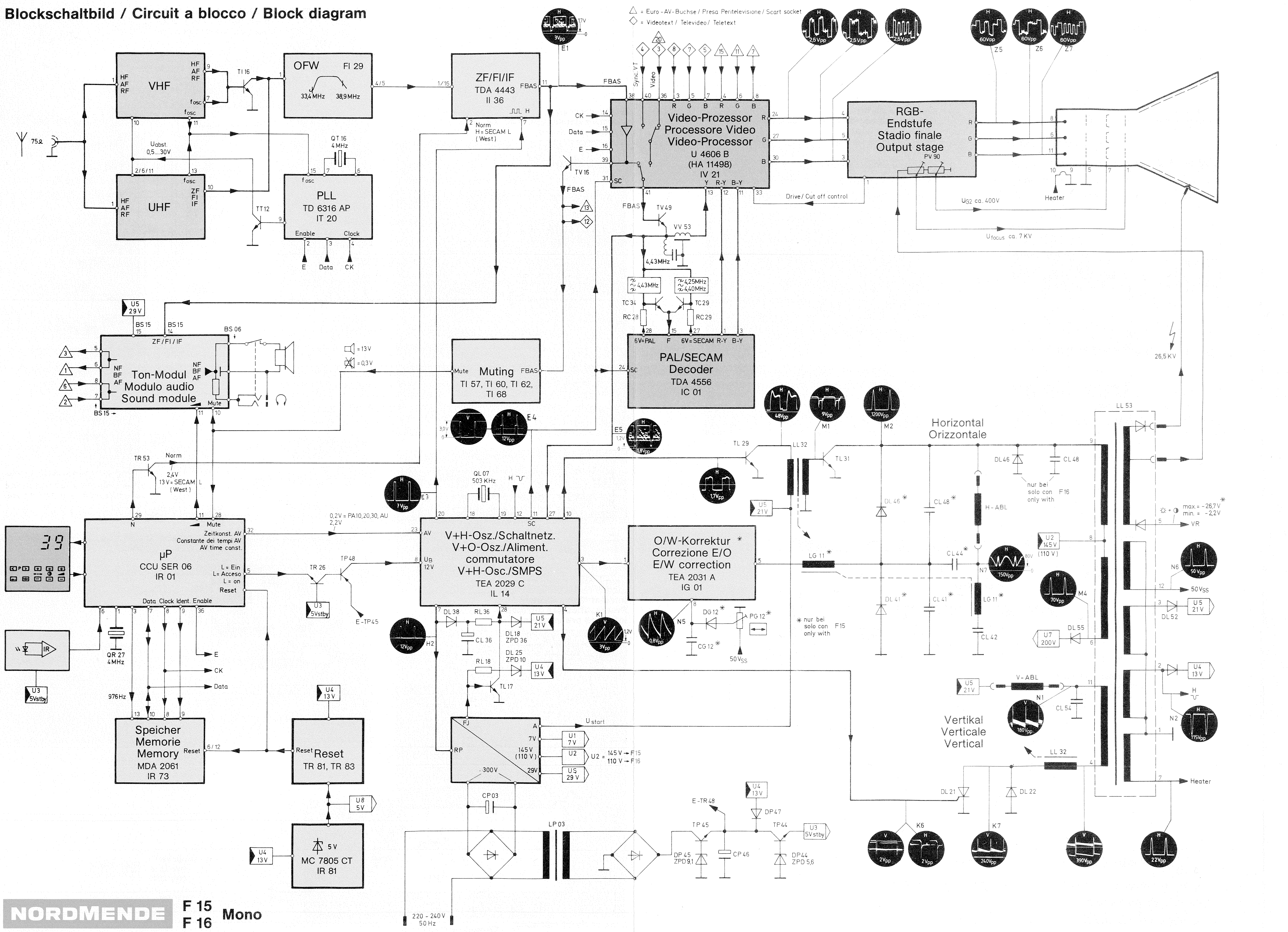
Infrarot-Vorverstärker
Preamplificatore infrarossi 583.521 B/C
Infra-red pre-amplifier


TA06 BC558C
RA10 220
RA24 220
CA03 220μ
DA01 BPW41
CA08 22n
RA08 22K
LA09 2m2
CA09 3n3
DA09
RA18 100K
CA19 68n
CA24 10μ
RA04 47K
RA03 470K
CA06 μ1
RA06 27K
TA07 BC558C
CA18 μ47
RA17 22K
CA23 1n
RA19 27K
RA01 5K6
CA01 15n
TA08 BC548C
CA12 1n
RA16 22K
4μ7
RA14 100
TA22 BC547B
TA01 BC558C
TA03 BC548C
RA02 150K
RA09 39K
TA12 BC558C
RA12 1M
TA13 BC558C
CA07 22n
RA07 22K
CA11 22n
RA11 100K
RA13 22K
CA13 820p
U 3
5V
IR
⊥
BR 02
RIR4000 RIR4001 RIR4007

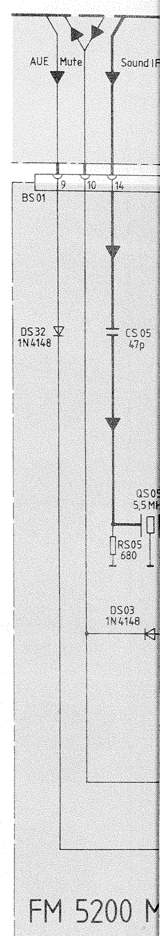

⊥
CA 24
TA13
CA13
RA13
CA18
RA12
CA11
RA11
TA08
TA07
CA03
RA09
CA07
RA07
RA02
CA01
TA01
RA01
CA14
TA12
RA18
RA17
CA12
CA08
DA09
CA06
DA01
TA22
CA19
RA14
RA24
RA19
RA16
LA09
RA10
CA09
TA06
RA08
RA06
RA04
RA03
TA03

Leiterplatte Infrarot-Vorverstärker
Piastra preamplificatore infrarossi 583.521 B/C
P.C.B. Infra-red pre-amplifier
Lötseite – Lato saldature – Soldered side

Blockschaltbild / Circuit a blocco / Block diagram


△ = Euro-AV-Buchse / Presa Peritelevisione / Scart socket
◇ = Videotext / Televideo / Teletext
VHF
HF AF RF
fosc
TI 16
OFW
FI 29
33,4 MHz
38,9 MHz
ZF/FI/IF
TDA 4443
II 36
FBAS
Norm
H = SECAM L
(West)
75Ω
Uabst. 0,5...30V
UHF
ZF FI IF
TT 12
PLL
TD 6316 AP
IT 20
QT 16
4 MHz
Enable
Clock
E
Data
CK
E1
3Vpp
Video-Prozessor
Processore Video
Video-Processor
U 4606 B
(HA 11498)
IV 21
Sync VT
Video
R G B R G B
Y R-Y B-Y
SC
TV 16
TV 49
VV 53
4,43 MHz
4,25 MHz
4,40 MHz
TC 34
TC 29
RC 28
RC 29
6V=PAL
F
6V=SECAM
PAL/SECAM
Decoder
TDA 4556
IC 01
2,5Vpp
Z5
Z6
Z7
60Vpp
RGB-
Endstufe
Stadio finale
Output stage
PV 90
Drive / Cut off control
UG2 ca. 400V
Ufocus ca. 7 KV
Heater
26,5 KV
U5
29V
BS 15
BS 06
ZF / FI / IF
Ton-Modul
Modulo audio
Sound module
NF BF AF
Mute
= 13V
= 0,3V
Muting
TI 57, TI 60, TI 62, TI 68
E4
E5
12Vpp
1,8Vpp
48Vpp
9Vpp
1200Vpp
M1
M2
TL 29
LL 32
TL 31
Horizontal
Orizzontale
LL 53
DL 46
CL 48
nur bei
solo con F16
only with
H-ABL
DL 45 *
CL 48 *
U5
21V
1,7Vpp
TR 53
Norm
2,4V
13V = SECAM L
(West)
39
µP
CCU SER 06
IR 01
Zeitkonst. AV
Costante dei tempi AV
AV time const.
L = Ein
L = Acceso
L = on
Reset
Data Clock Ident. Enable
QR 27
4MHz
976Hz
IR
U3
5Vstby
7Vpp
E3
QL 07
503 KHz
0,2V ≙ PA10,20,30, AU
2,2V
TR 26
TP 48
E-TP45
V+H-Osz./Schaltnetz.
V+O-Osz./Aliment.
commutatore
V+H-Osz./SMPS
TEA 2029 C
IL 14
UB 12V
O/W-Korrektur *
Correzione E/O
E/W correction
TEA 2031 A
IG 01
K1
3Vpp
N5
0,8Vpp
DG 12 *
PG 12 *
CG 12 *
50VSS
* nur bei
solo con F15
only with
LG 11 *
CL 44 *
N7
150Vpp
U2
145V
(110V)
DL 41 *
CL 41 *
LG 11 *
CL 42
70Vpp
M4
U7
200V
DL 55
max. = -26,7V *
min. = -2,2V
VR
N6
50Vpp
50VSS
U5 21V
DL 52
U4 13V
H
N2
115Vpp
12Vpp
H2
DL 38
RL 36
CL 36
DL 18
ZPD 36
DL 25
ZPD 10
RL 18
TL 17
U4
13V
FJ
RP
A
7V
145V (110V)
29V
300V
U1 7V
U2 = 145V → F15
110V → F16
U5 29V
Ustart
CP 03
LP 03
220 - 240V
50Hz
E-TR 48
TP 45
DP 45
ZPD 9,1
CP 46
TP 44
DP 44
ZPD 5,6
DP 47
U3 5Vstby
V-ABL
N1
180Vpp
CL 54
Vertikal
Verticale
Vertical
LL 32
DL 21
DL 22
K6
K7
2Vpp
240Vpp
390Vpp
22Vpp
Heater
Speicher
Memorie
Memory
MDA 2061
IR 73
Reset
TR 81, TR 83
U8
5V
MC 7805 CT
IR 81
5V
U4 13V

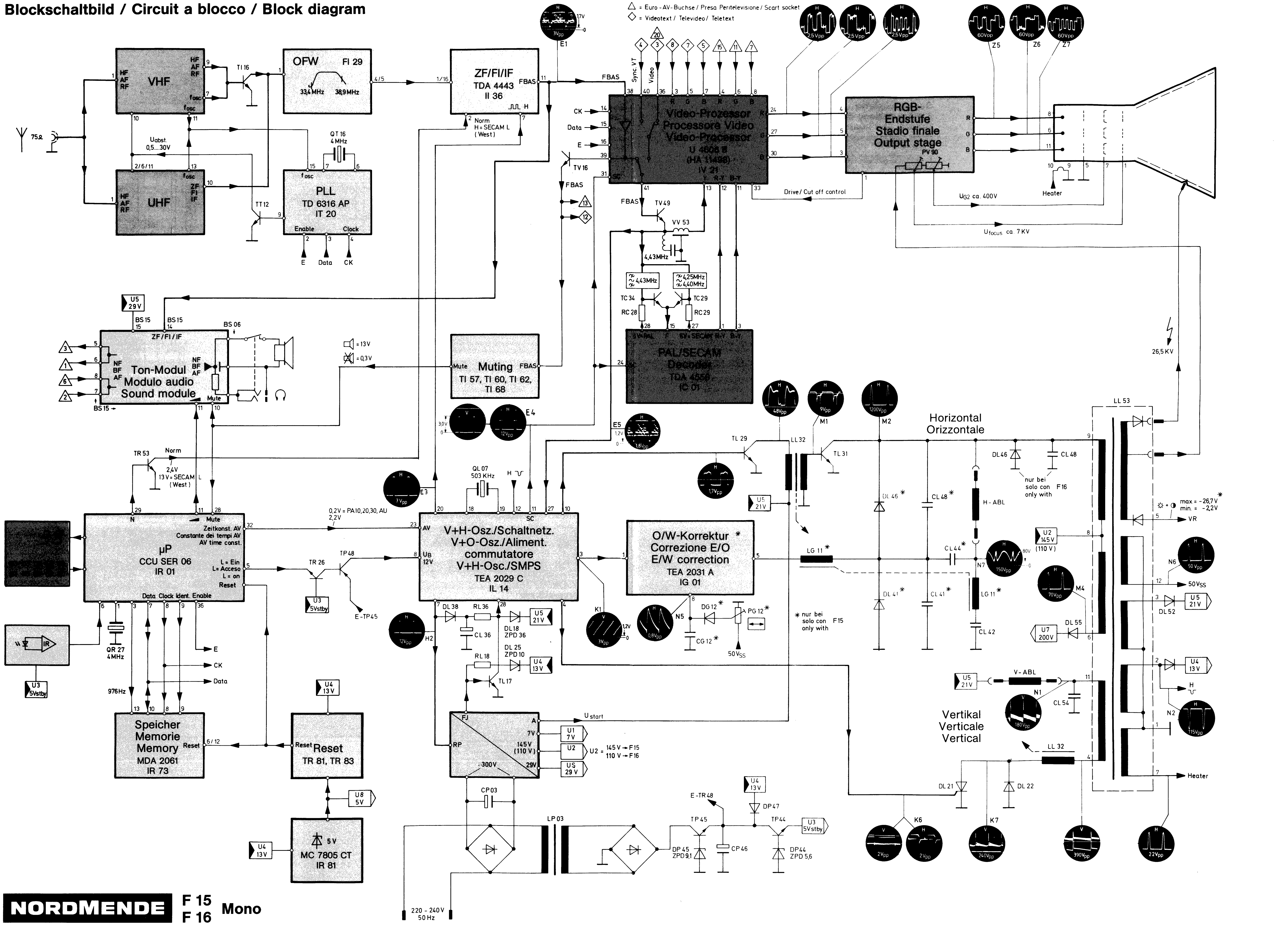
Ton-Modu
Modulo a
Sound mo


AUE
Mute
BS 01
DS 32
1N4148
CS 05
47p
RS 05
680
DS 03
1N4148
FM 5200

Ton-Modul
Modulo audio
Sound module

NORDMENDE F 15 F 16 **Mono**

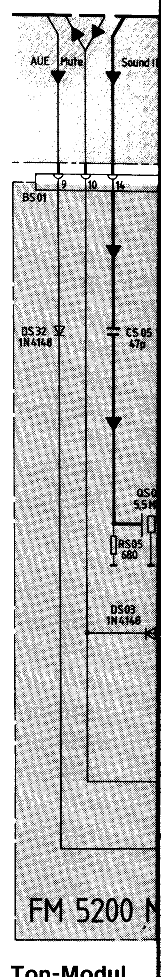
Blockschaltbild / Circuit a blocco / Block diagram



△ = Euro-AV-Buchse / Presa Peritelevisione / Scart socket
◇ = Videotext / Televideo / Teletext
VHF
HF AF RF
UHF
HF AF RF ZF FI IF
fosc
75Ω
Uabst. 0,5....30V
TI 16
TT 12
OFW FI 29
33,4MHz 38,9MHz
PLL TD 6316 AP IT 20
QT 16 4MHz
Enable Clock
E Data CK
ZF/FI/IF TDA 4443 II 36
FBAS
Norm H = SECAM L (West)
E1
17V
3Vpp
Sync. VT
Video
Video-Prozessor Processore Video Video-Processor U 4608 B (HA 11498) IV 21
R G B Y R-Y B-Y
CK Data E
TV 16
FBAS
TV 49
VV 53
4,43MHz
4,43MHz
4,25MHz 4,40MHz
TC 34 TC 29
RC 28 RC 29
PAL/SECAM Decoder TDA 4556 IC 01
Drive / Cut off control
RGB-Endstufe Stadio finale Output stage PV 90
2,5Vpp 2,5Vpp 2,5Vpp
60Vpp 60Vpp 60Vpp
Z5 Z6 Z7
R G B
Heater
UG2 ca. 400V
Ufocus ca. 7KV
26,5KV
U5 29V
BS 15 BS 15 BS 06
ZF/FI/IF
NF BF AF
Ton-Modul Modulo audio Sound module
Mute
BS 15
= 13V
= 0,3V
Mute Muting FBAS TI 57, TI 60, TI 62, TI 68
E4 E5
3,0V 0V
12Vpp
1,2V
1,8Vpp
TR 53
Norm
2,4V 13V = SECAM L (West)
N
Mute
Zeitkonst. AV Constante dei tempi AV AV time const.
μP CCU SER 06 IR 01
L = Ein L = Acceso L = on
Reset
Data Clock Ident. Enable
QR 27 4MHz
976Hz
E CK Data
IR
U3 5Vstby
0,2V = PA10,20,30, AU 2,2V
TR 26 TP 48
U3 5Vstby
E-TP45
E3
7Vpp
QL 07 503KHz
SC
AV
UB 12V
V+H-Osz./Schaltnetz. V+O-Osz./Aliment. commutatore V+H-Osc./SMPS TEA 2029 C IL 14
DL 38 RL 36
CL 36
DL 18 ZPD 36
DL 25 ZPD 10
RL 18
TL 17
U5 21V
U4 13V
H2
12Vpp
K1
12V
3Vpp
O/W-Korrektur * Correzione E/O E/W correction TEA 2031 A IG 01
N5
0,8Vpp
DG 12 *
PG 12 *
CG 12 *
50VSS
* nur bei solo con F15 only with
TL 29 LL 32 TL 31
M1 M2
48Vpp 9Vpp 1200Vpp
1,7Vpp
U5 21V
LG 11 *
Horizontal Orizzontale
DL 46 * CL 48 *
DL 41 * CL 41 *
DL46 CL 48
nur bei solo con F16 only with
H-ABL
CL 44 *
N7
150Vpp
80V
LG 11 *
CL 42
U2 145V (110V)
U7 200V
DL 55
M4
70Vpp
LL 53
max. = -26,7V min. = -2,2V
VR
N6
50Vpp
50VSS
DL 52
U5 21V
U4 13V
H
N2
115Vpp
Heater
U5 21V
V-ABL
N1
180Vpp
CL 54
Vertikal Verticale Vertical
LL 32
DL 21 DL 22
K6 K7
2Vpp 2Vpp 240Vpp 390Vpp 22Vpp
Speicher Memorie Memory MDA 2061 IR 73
Reset
6/12
Reset TR 81, TR 83
U4 13V
U8 5V
MC 7805 CT IR 81
5V
U4 13V
FJ RP
A 7V 145V (110V) 29V
300V
Ustart
U1 7V
U2 U2 = 145V → F15 110V → F16
U5 29V
CP 03
LP 03
220-240V 50Hz
E-TR 48
U4 13V
DP 47
TP 45 TP 44
U3 5Vstby
DP 45 ZPD 9,1
CP 46
DP 44 ZPD 5,6

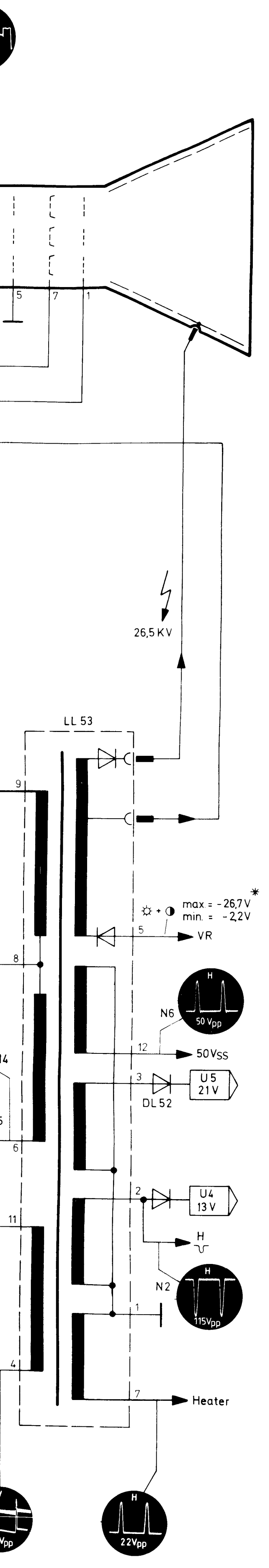
NORDMENDE **F 15 F 16** **Mono**

Ton-Modu
Modulo a
Sound m

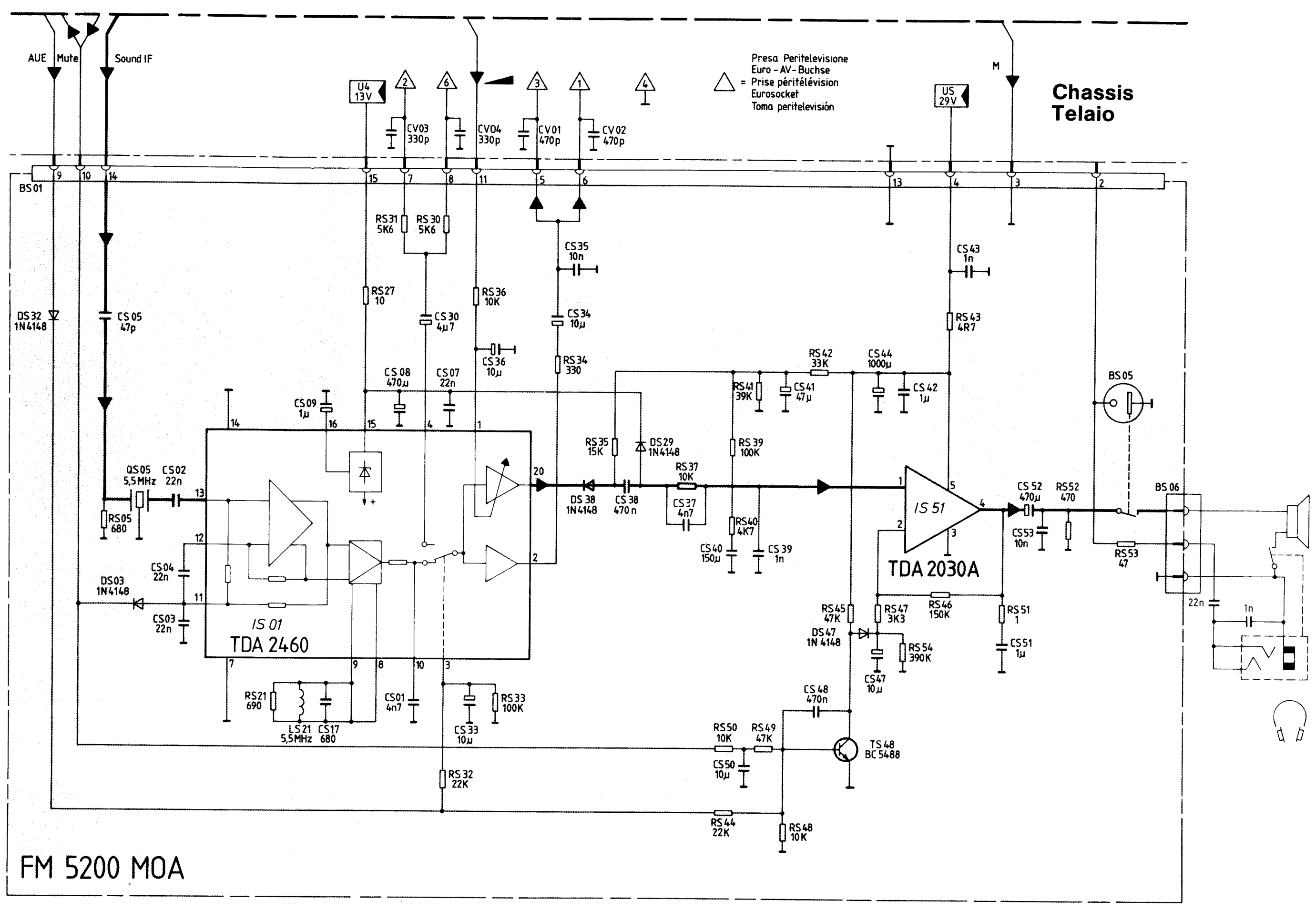


AUE
Mute
Sound
BS 01
DS 32 1N4148
CS 05 47p
QS0 5,5M
RS05 680
DS03 1N4148
FM 5200

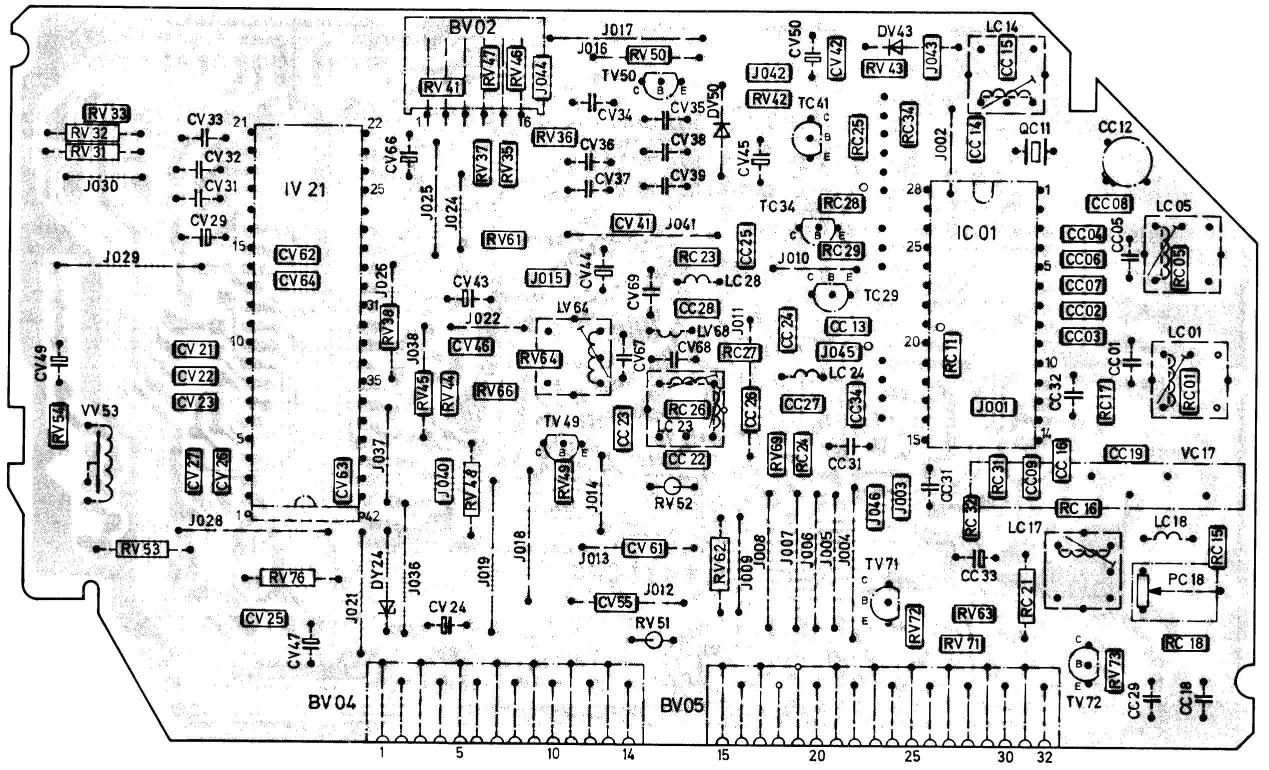
Ton-Modul
Modulo audi
Sound modul


26,5 KV
LL 53
max = -26,7V
min. = -2,2V
VR
N6
50 Vpp
50VSS
U5
21V
DL 52
U4
13 V
H
N2
115Vpp
Heater
22Vpp

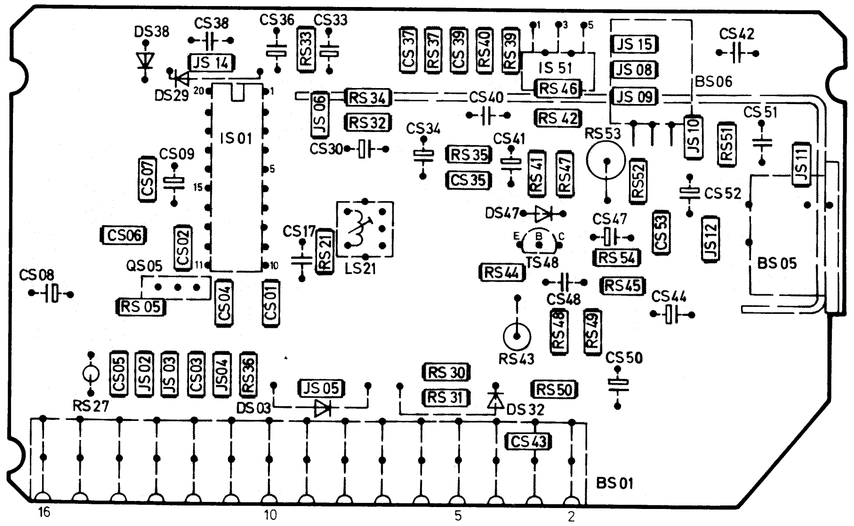
Ton-Modul, wahlweise
Modulo audio, sostitutivo FM 5200 MOA
Sound module, alternative


AUE
Mute
Sound IF
Presa Peritelevisione
Euro - AV - Buchse
= Prise péritélévision
Eurosocket
Toma peritelevisión
Chassis
Telaio
BS01
BS05
BS06
IS 01
TDA 2460
IS 51
TDA 2030A
TS48
BC548B
FM 5200 MOA

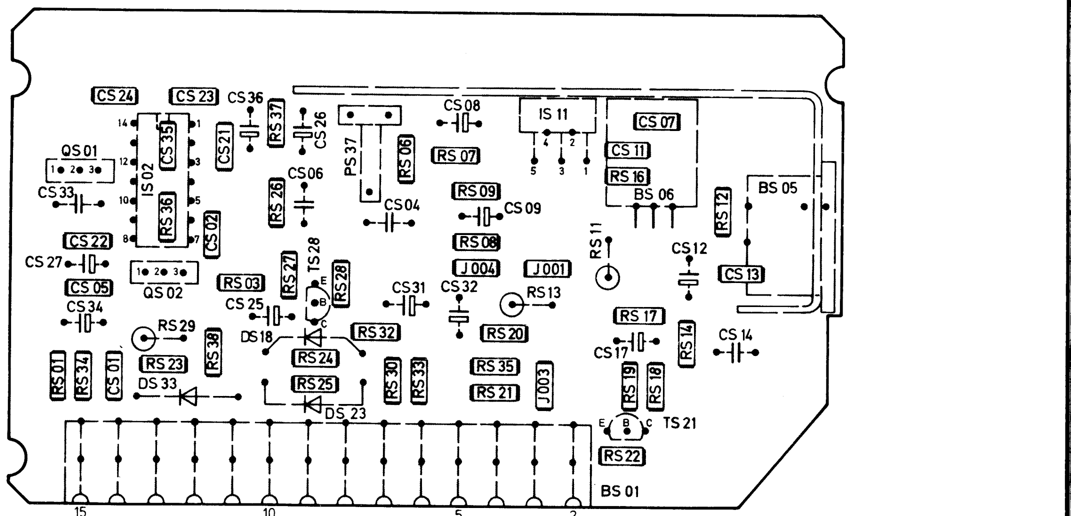
Ton-Modul
Modulo audio 596 TX 2162
Sound module


BV02
IV 21
IC 01
BV04
BV05
1
5
10
14
15
20
25
30
32

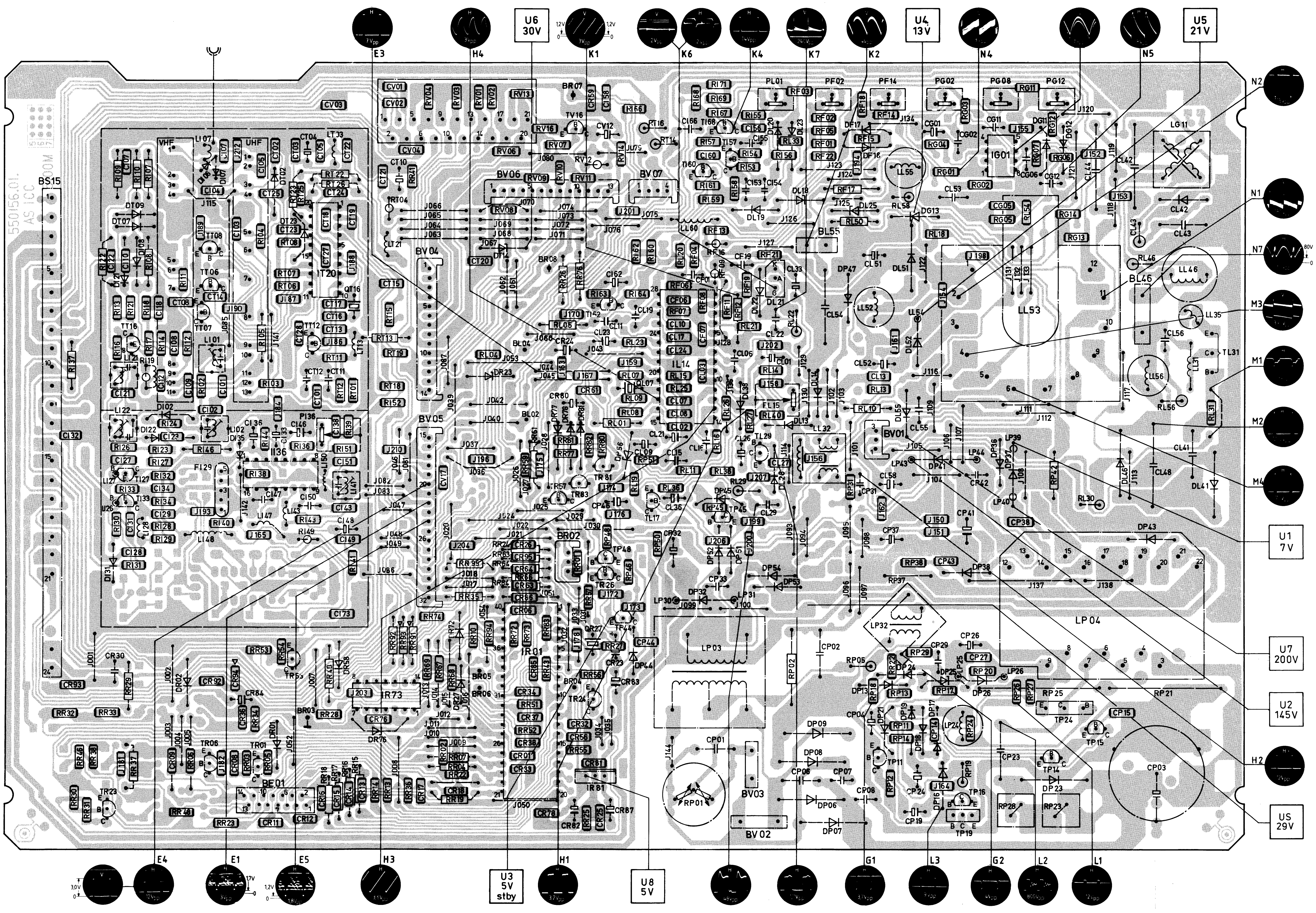
Chroma-Video-Modul
Modulo crominanza video 592.730
Chroma video module
Lötseite - Lato saldature - Soldered side


IS 01
IS 51
BS06
BS05
BS01
16
10
5
2

Ton-Modul
Modulo audio 596 TX 2162
Sound module
Lötseite - Lato saldature - Soldered side


IS 11
IS 02
BS 06
BS 05
BS 01
15
10
5
2

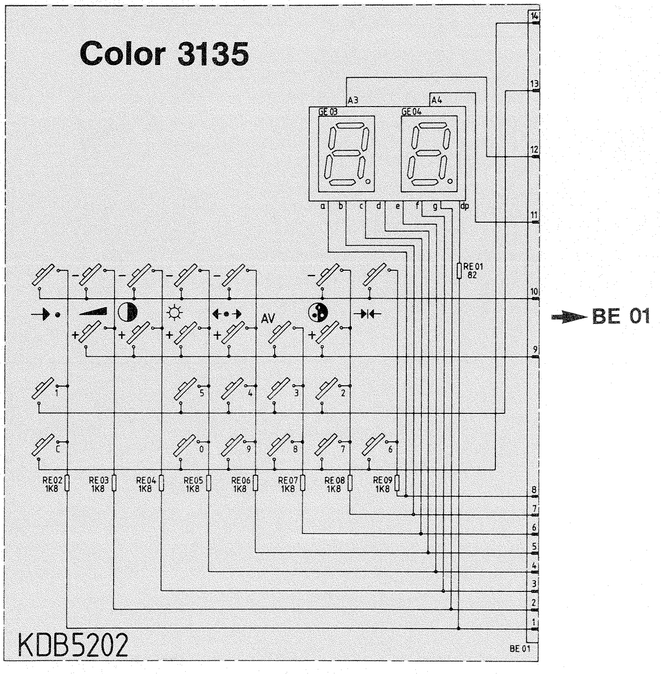
Ton-Modul
Modulo audio 592.980
Sound module
Lötseite - Lato saldature - Soldered side


E3
H4
U6
30V
K1
K6
K4
K7
K2
U4
13V
N4
N5
U5
21V
N2
N1
N7
M3
M1
M2
M4
U1
7V
U7
200V
U2
145V
H2
US
29V
E4
E1
E5
H3
U3
5V
stby
H1
U8
5V
G1
L3
G2
L2
L1
BS15
BV04
BV05
BV06
BV07
BL55
LL53
LP04
LP03
BV03
BV02
IR01
IR73
IL14
BE01
LG11
BL46
LP32

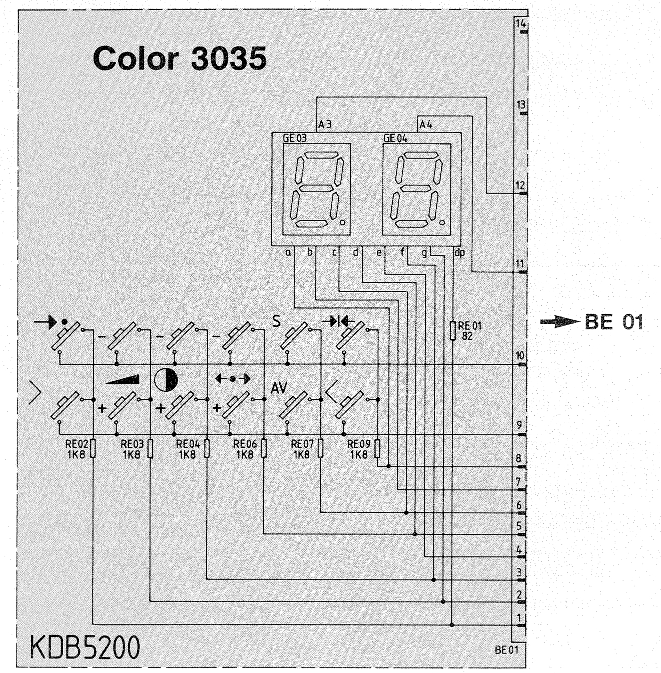
Grundplatte
Piastra di base F 15-01
Basic P.C.B.
Lötseite – Lato saldature – Soldered side

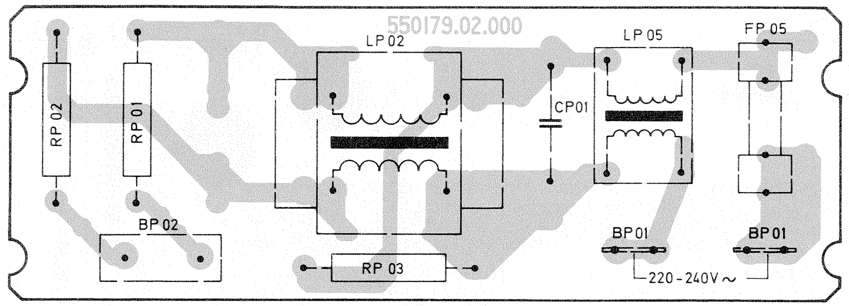
▽ = nur bei Color 3035
solo con Color 3135
only with

Bedienteilplatte
Piastra sezione comandi 592.987
Control unit board


Color 3135
GE03
GE04
A3
A4
AV
BE 01
KDB5202

Bedienteilplatte
Piastra sezione comandi 592.756
Control unit board


Color 3035
GE03
GE04
A3
A4
AV
BE 01
KDB5200


550179.02.000
RP 02
RP 01
LP 02
CP01
LP 05
FP 05
BP 02
RP 03
BP 01
BP 01
220–240V ~

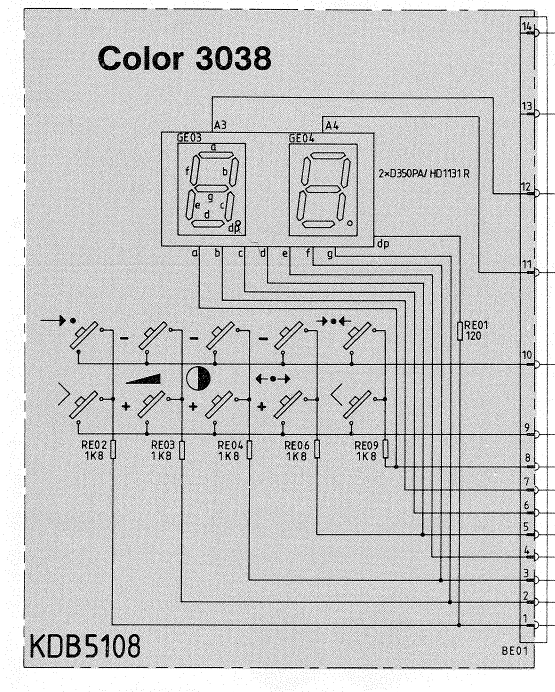
Leiterplatte Netzfilter
Piastra bobina d'arresto 527.436
P.C.B. Mains filter
Lötseite – Lato saldature – Soldered side

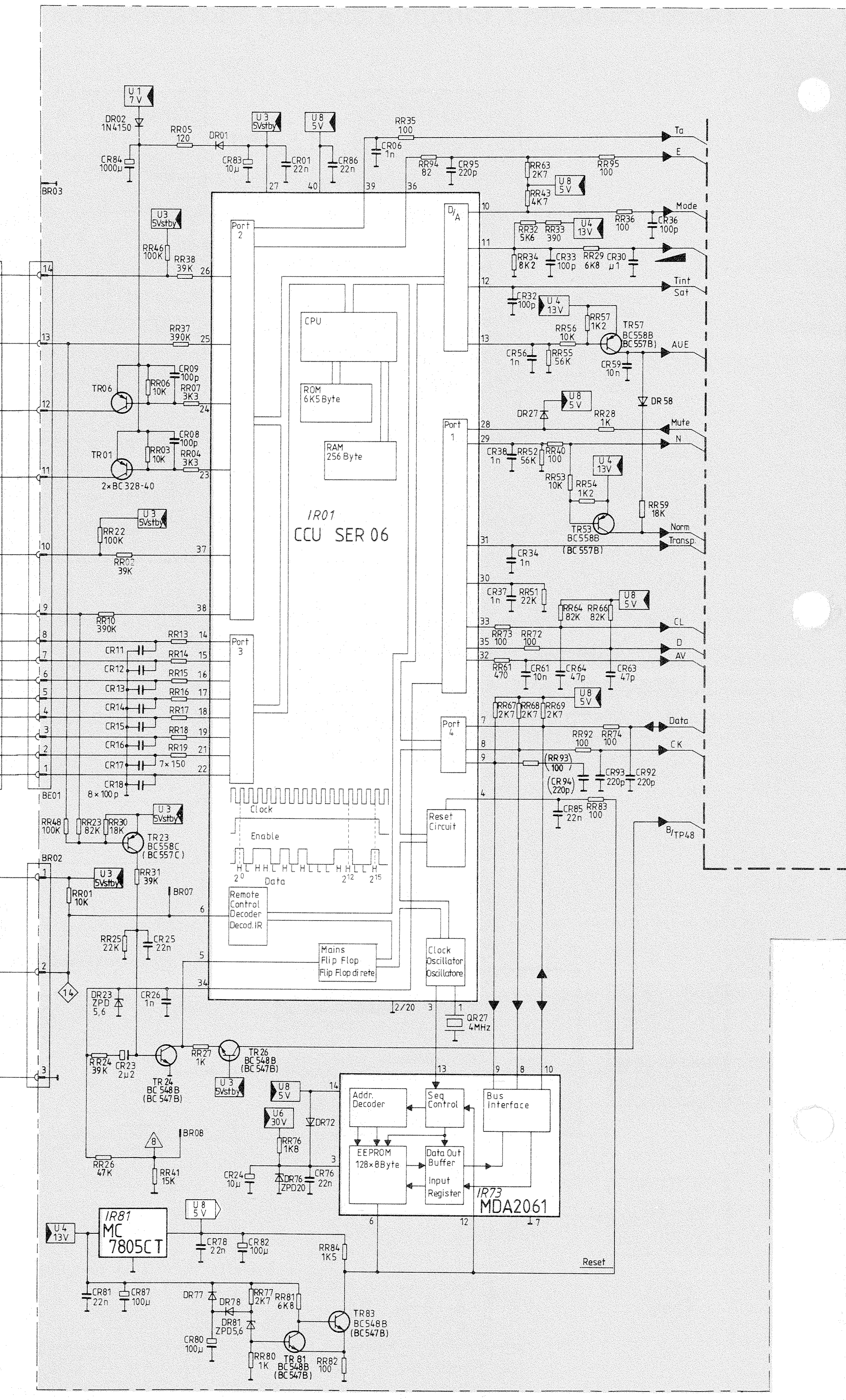
Chassis F15 M-01 ICC 5115 ML
Chassis F15-01 785.522.B 01 115-01

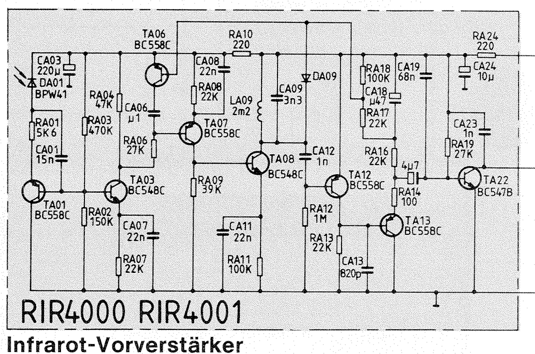
NORDMENDE

„Chassis 01" 110°

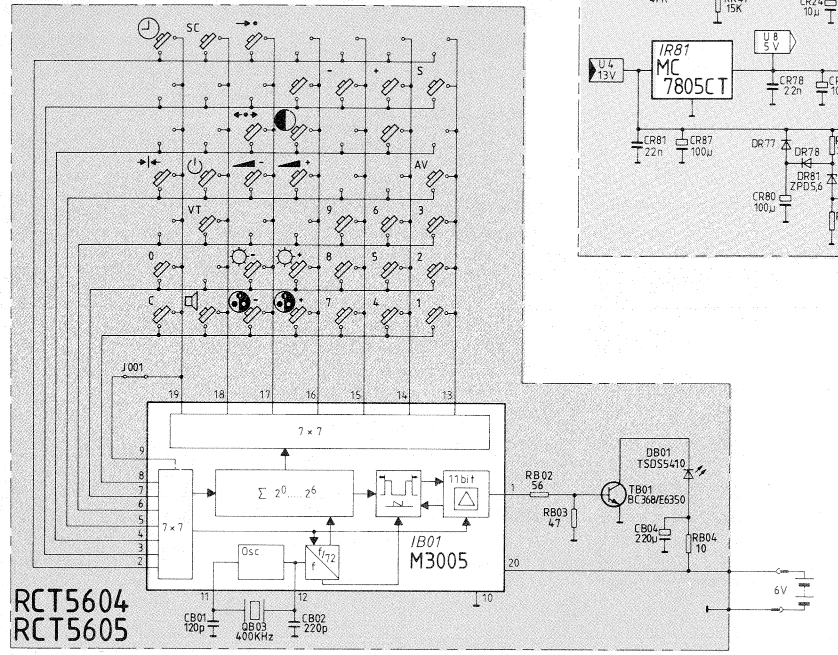
Bedienteilplatte
Piastra sezione comandi 592.755
Control unit board


Color 3038
GE03
GE04
A3
A4
2×D350PA/HD1131R
BE01
KDB5108


IR01
CCU SER 06
CPU
ROM 6K5 Byte
RAM 256 Byte
Port 1
Port 2
Port 3
Port 4
Clock
Enable
Data
Remote Control Decoder Decod IR
Mains Flip Flop
Reset Circuit
Clock Oscillator
QR27 4MHz
IR73
MDA2061
Addr. Decoder
Seq Control
Bus Interface
EEPROM 128×8Byte
Data Out Buffer
Input Register
IR81
MC 7805CT
Reset
Mode
Tint
Sat
AUE
Norm
Transp
CL
D
AV
Data
CK
Mute


BPW41
RIR4000 RIR4001

Infrarot-Vorverstärker
Preamplificatore infrarossi 583.521 B/C
Infra-red pre-amplifier


SC
AV
VT
7×7
Osc
IB01
M3005
DB01 TSDS5410
TB01 BC368/E6350
QB03 400KHz
6V
RCT5604
RCT5605

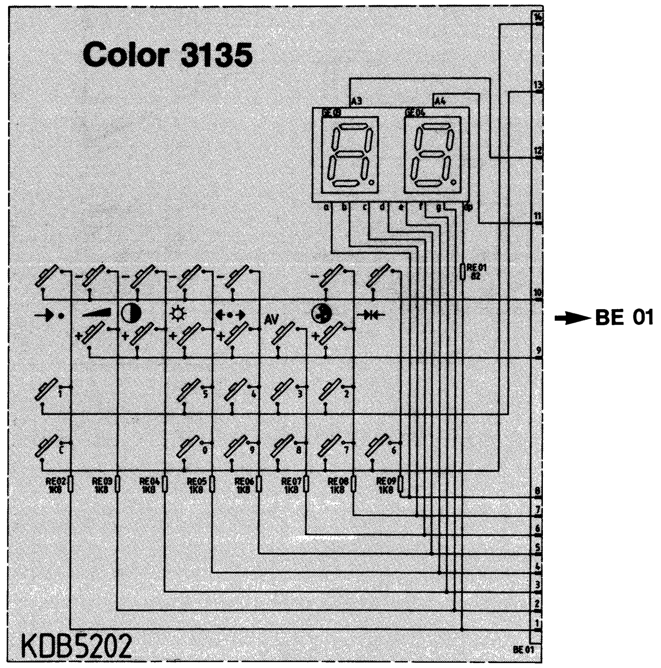
Infrarot-Fernbedienung
Telecomando infrarossi
Infra-red remote control

Computer Control 4
583.561

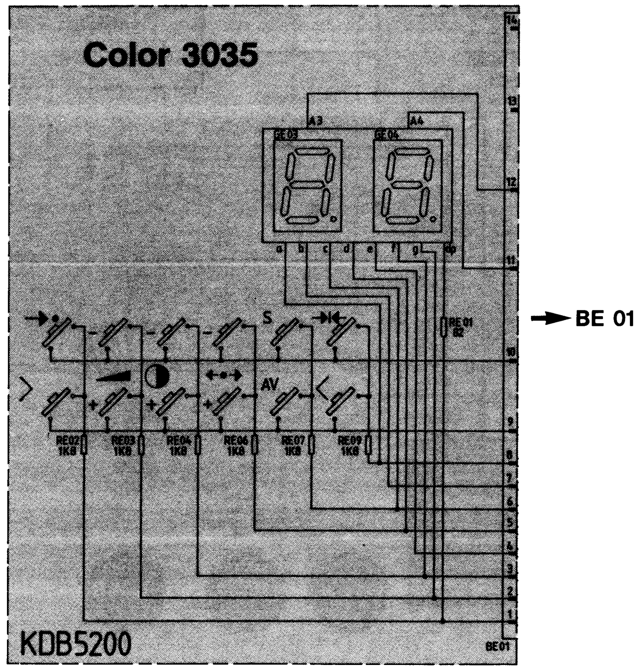
( ) = nur bei solo con only with Color 3035 Color 3135

▫ = nur bei solo con only with Color 3038

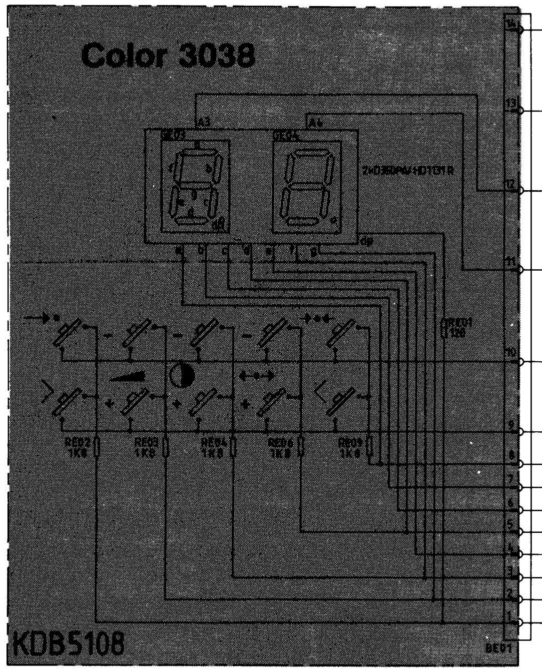
Bedienteilplatte
Piastra sezione comandi 592.987
Control unit board

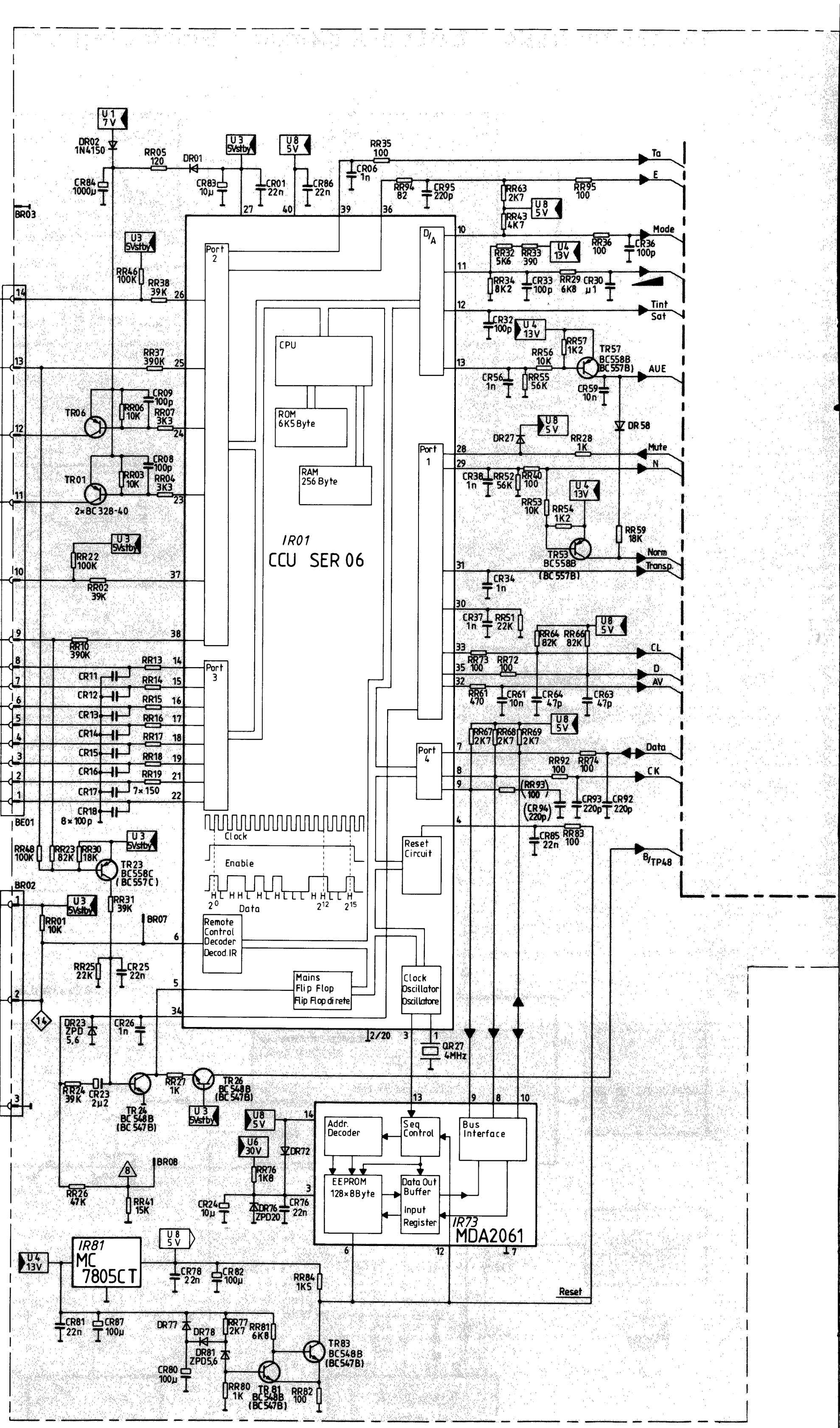

Color 3135
KDB5202
AV
BE 01

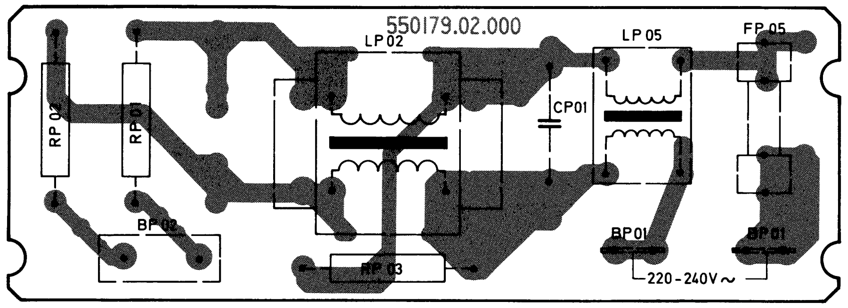
Bedienteilplatte
Piastra sezione comandi 592.756
Control unit board


Color 3035
KDB5200
AV
S
BE 01

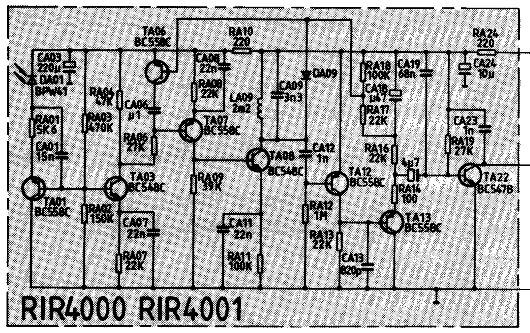
Bedienteilplatte
Piastra sezione comandi 592.755
Control unit board


Color 3038
KDB5108
BE01

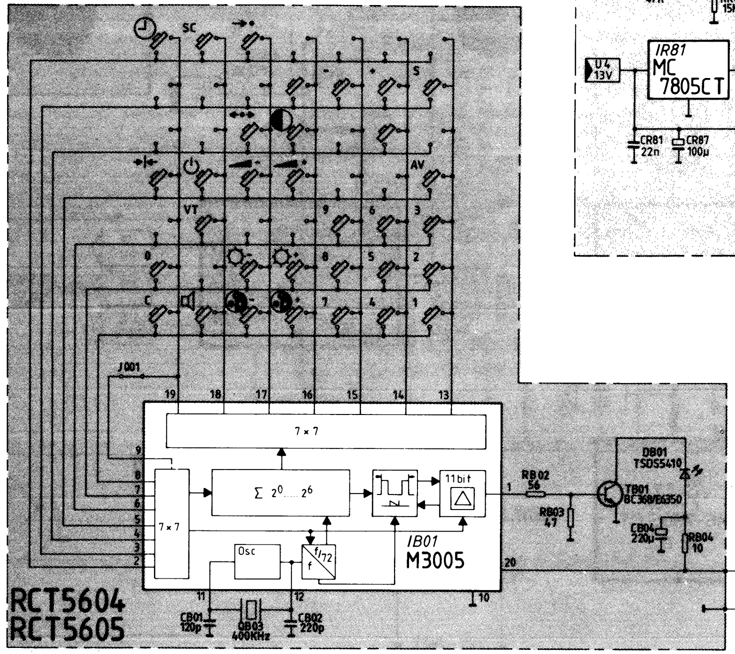

IR01
CCU SER 06
CPU
ROM 6K5 Byte
RAM 256 Byte
Port 1
Port 2
Port 3
Port 4
Reset Circuit
Clock Oscillator
Mains Flip Flop
Remote Control Decoder
Addr. Decoder
Seq Control
Bus Interface
EEPROM 128×8 Byte
Data Out Buffer
Input Register
IR73
MDA2061
IR81
MC 7805CT
2×BC 328-40
Ta
E
Mode
Tint
Sat
AUE
Mute
N
Norm
Transp
CL
D
AV
Data
CK
TP48
Reset


550179.02.000
LP 02
LP 05
FP 05
CP01
RP 02
RP 01
BP 02
BP 01
RP 03
220-240V ~

Leiterplatte Netzfilter
Piastra bobina d'arresto 527.436
P.C.B. Mains filter
Lötseite – Lato saldature – Soldered side


RIR4000 RIR4001

Infrarot-Vorverstärker
Preamplificatore infrarossi 583.521 B/C
Infra-red pre-amplifier


RCT5604
RCT5605
IB01
M3005
7×7
Osc
11bit
J001
6V
AV
VT
SC
S

Infrarot-Fernbedienung
Telecomando infrarossi
Infra-red remote control

Computer Control 4
583.561

( ) = nur bei solo con only with Color 3035 Color 3135

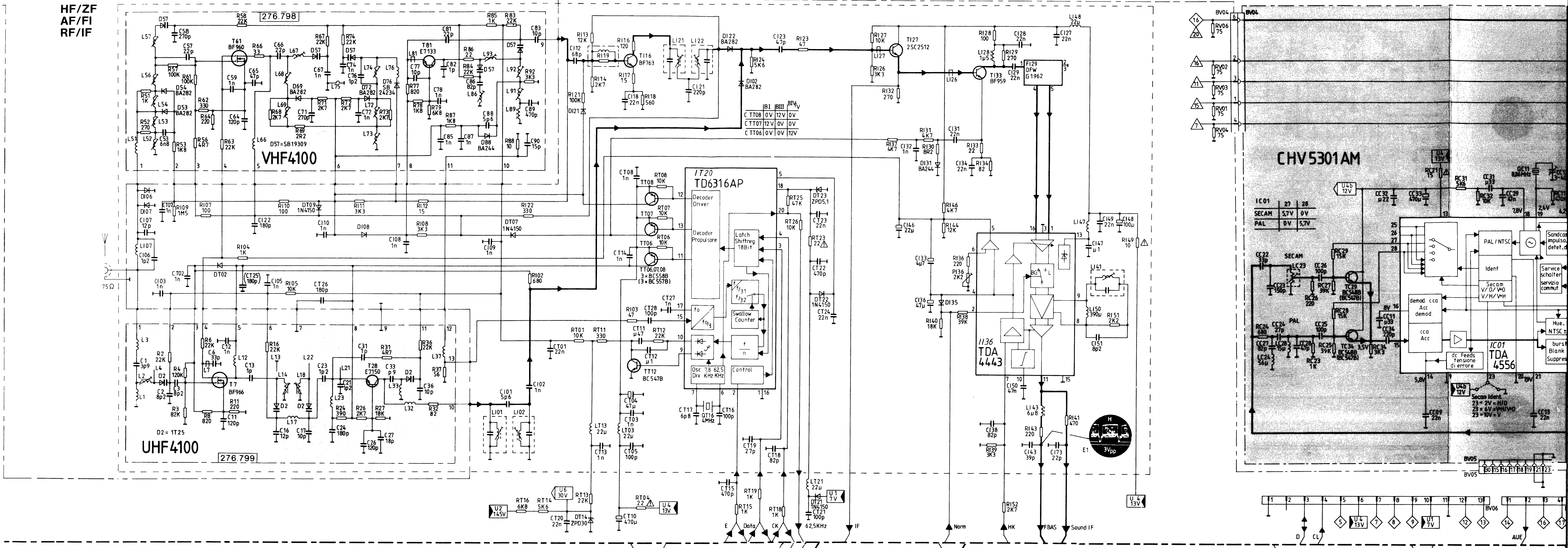
▫ = nur bei solo con only with Color 3038

Chassis F15M-01 ICC 5115 ML
Chassis F15-01 785.522.B 01 115-01

NORDMENDE „Chassis 01" 110°

Chroma-Video-Modul
Modulo crominanza video 592.730
Chroma video module

HF/ZF
AF/FI
RF/IF


VHF4100
UHF4100
276.798
276.799
TD6316AP
TDA 4443
CHV5301AM
TDA 4556
Decoder Driver
Decoder Propulsore
Latch Shifting 18Bit
Swallow Counter
Control
Osc 7,8 62,5 Div KHz KHz
PAL/NTSC
Ident
Secam V/O/V-H V/H/V+H
Sandcastle impulso detect.
Service schalter servizio commut.
demod. cca Acc demod.
cca Acc
dc Feeds tensione di errore
Hue NTSC
burst Blank Suppres
Secam Ident. 23 ≙ 2V ≙ H/O 23 ≙ 6V ≙ MH/V-O 23 ≙ 10V ≙ V
IC01 27 28 SECAM 5,7V 0V PAL 0V 5,7V
Norm
HK
FBAS
Sound IF
IF
E Data CK
A F M RP
C-TR26 P
AUE
D CL
3Vpp
75 Ω

△ = Euro-AV-Buchse Presa Peritelevisione Eurosocket	
1 NF/AF 'R' ⊸ BF 'D' 0,5 V RMS	12 X
2 NF/AF 'R' ⊖ BF 'D' 0,5 V RMS	13 ⏊ Video R
3 NF/AF 'L' ⊸ BF 'S' 0,5 V RMS	14 X
4 ⏊ NF/AF BF	15 Video R ⊖ 0,7 V RMS
5 ⏊ Video B	16 Blanking ⊖ Spegnim. Video
6 NF/AF 'L' ⊖ BF 'S' 0,5 V RMS	17 ⏊ Video
7 Video B ⊖ 0,7 V RMS	18 ⏊ Blanking Spegnimento
8 Mode AV ≙ 12 V	19 Video ⊸ 1 Vpp/75 Ω
9 ⏊ Video G/V	20 Video ⊖ 1 Vpp/75 Ω
10 X	21 ⏊ Chassis Telaio
11 Video G/V ⊖ 0,7 V RMS	V RMS = Veff Vpp = Vss

Achtung!

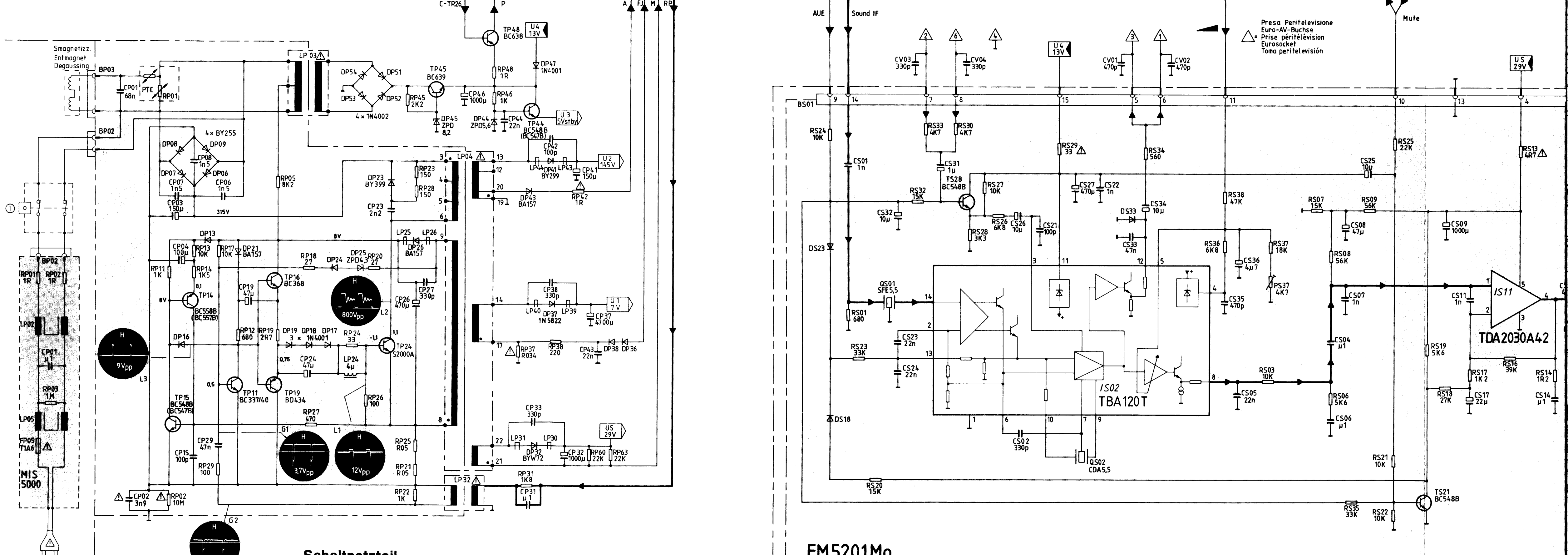
Bei Arbeiten am Schaltnetzteil Trenntrafo verwenden, und Messungen in diesem Bereich gegen Masse des Schaltnetzteils (Emitter TP 15) ausführen.

Attenzione!

Per i lavori sull'alimentatore a commutazione, bisogna utilizzare un trasformatore separatore ed effettuare le misurazioni in questo ambito verso massa dell'alimentatore a commutazione (emettitore TP 15).

Attention!

When carrying out repair work on components in the primary circuit of the switch mode power supply (SMPS), an isolating transformer must be employed. Measurements to be taken against ground within the primary side of the SMPS (emitter of TP 15).

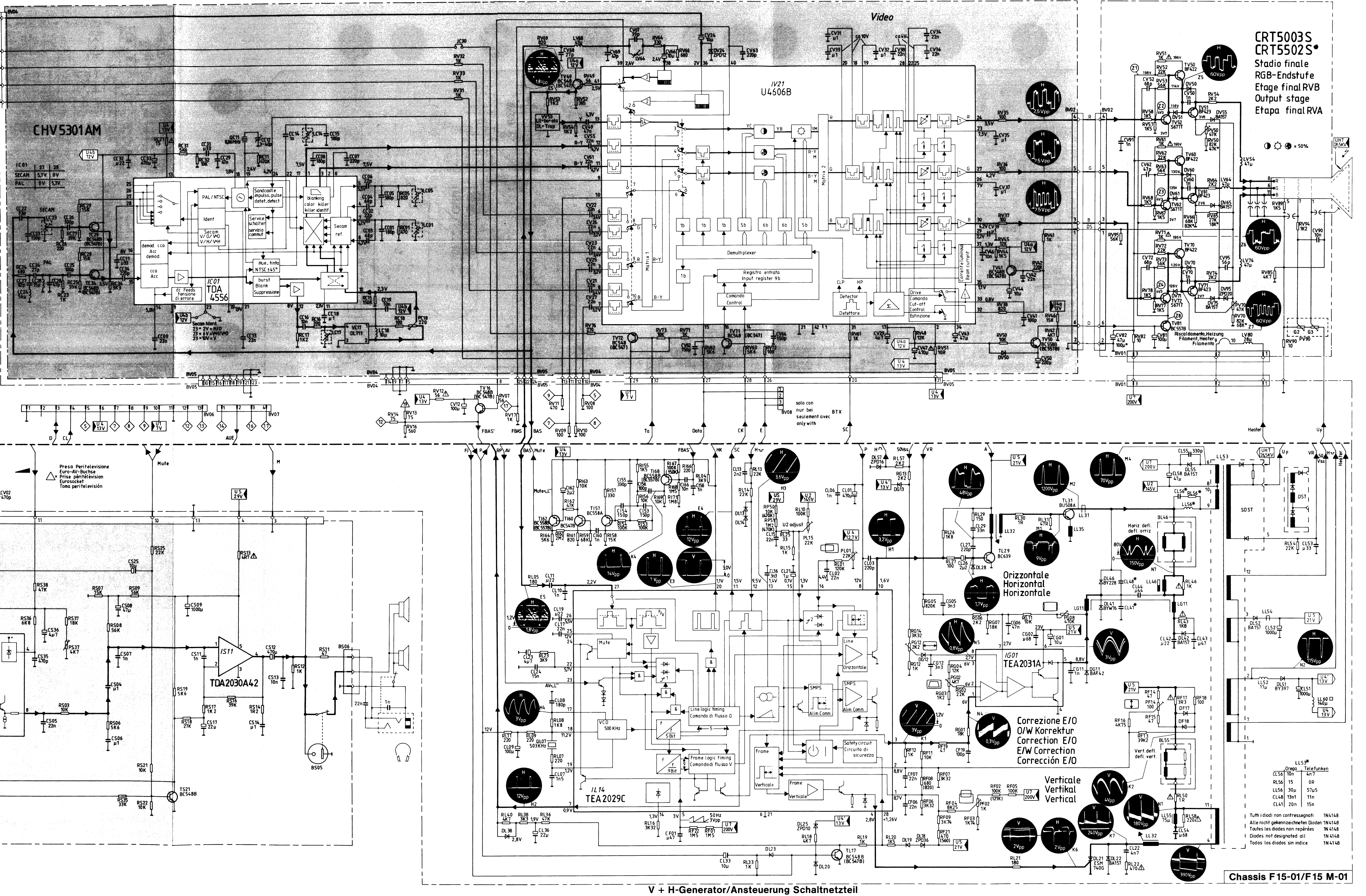

Smagnetizz. Entmagnet. Degaussing
MIS 5000
220-240V~50Hz
9Vpp
800Vpp
3,7Vpp
12Vpp
4Vpp
4 × BY255
4 × 1N4002
TBA120T
TDA2030A42
FM5201Mo
Presa Peritelevisione Euro-AV-Buchse Prise péritélévision Eurosocket Toma peritelevisión
Mute
Sound IF

Schaltnetzteil
Alimentatore a commutazione
Switch-mode power supply (SMPS)

Ton-Modul
Modulo audio 592.980
Sound module

Chroma-Video-Modul
Modulo crominanza video 592.730
Chroma video module

Bildrohranschluß-Platine
Piastra zoccolo cinescopio 592.977
P.C.B. CRT socket

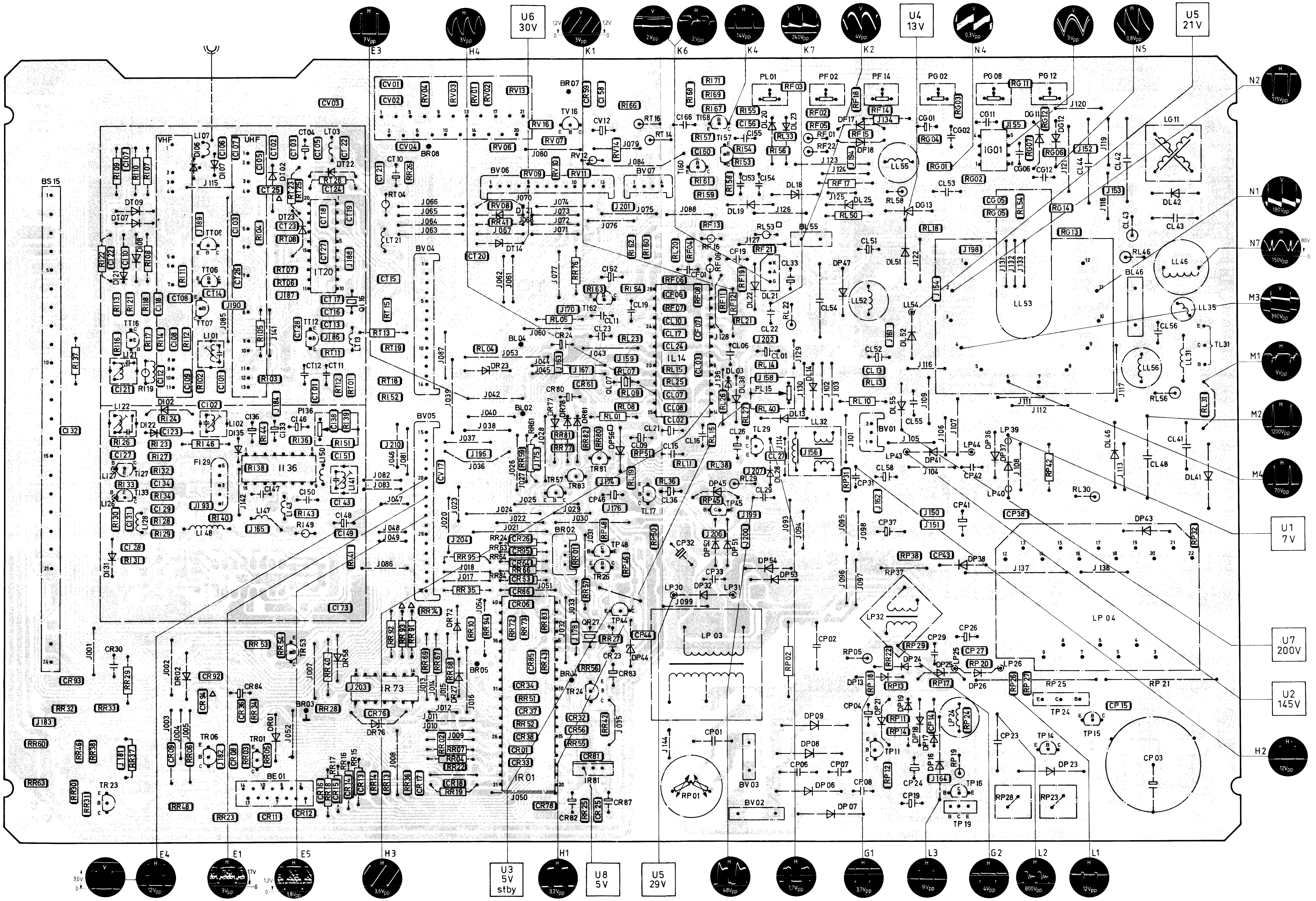

CHV5301AM
IC01 TDA 4556
PAL/NTSC
Ident
Secam V/O/VO V/H/VH
Sandcastle impulso, pulse detet. defect
blanking color killer killer identif
Service schalter servizio commut
Hue. tinta NTSC ±45°
burst Blank Suppression
dc feeds tensione di errore
demod. cca Acc demod.
Secam ref.
Secam Ident. 23 = 2V = N/O 23 = 6V = VH/VO 23 = 10V = V
Video
IV21 U4606B
Matrix 1
Matrix 2
Demultiplexer
Registro entrata Input register 9b
Comando Control
Detector Detettore
CLP HP
Drive Comando Cut-off Control Estinzione
Corrente luminosa Beam current
CRT5003S
CRT5502S•
Stadio finale
RGB-Endstufe
Etage final RVB
Output stage
Etapa final RVA
= 50%
Riscaldamento, Heizung Filament, Heater Filamento
Presa Peritelevisione
Euro-AV-Buchse
Prise péritélévision
Eurosocket
Toma peritelevisión
Mute
IS11 TDA2030A42
IL14 TEA2029C
Line logic timing Comando di flusso O
Frame logic timing Comando di flusso V
VCO 500 KHz
Safety circuit Circuito di sicurezza
Alim Comm.
Orizzontale
Verticale
IG01 TEA2031A
Orizzontale
Horizontal
Horizontale
Correzione E/O
O/W Korrektur
Correction E/O
E/W Correction
Corrección E/O
Verticale
Vertikal
Vertical
Horiz defl. defl. orizz.
Vert. defl. defl. vert.
SDST
DST
solo con nur bei seulement avec only with BTX

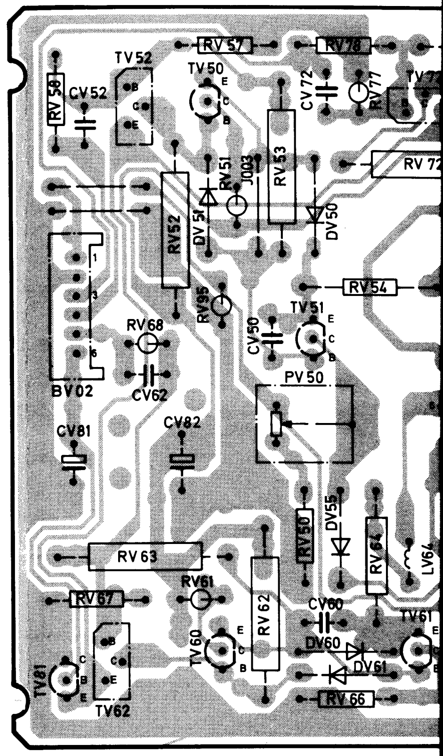
LL53*	Orega	Telefunken
CL56	10n	4n7
RL56	15	0R
LL56	30µ	57µ5
CL48	13n1	11n
CL41	20n	15n

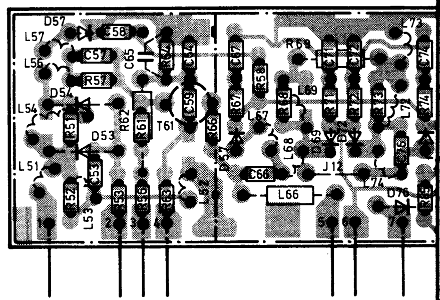
Tutti i diodi non contressegnati	1N4148
Alle nicht gekennzeichneten Dioden	1N4148
Toutes les diodes non repérées	1N 4148
Diodes not designated all	1N 4148
Todos los diodos sin indice	1N 4148

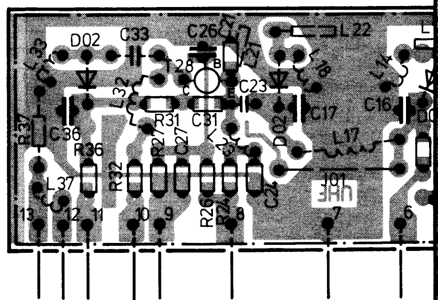
Chassis F15-01/F15 M-01

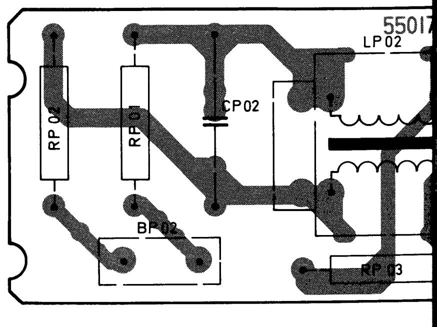
V + H-Generator/Ansteuerung Schaltnetzteil
Generatore V + O/azionamento aliment. commutat.
V + H generator/control of SMPS


E3
7Vpp
H4
3Vpp
U6
30V
K1
3Vpp
1,2V
K6
2Vpp
2Vpp
K4
14Vpp
K7
240Vpp
K2
4Vpp
U4
13V
N4
0,3Vpp
3Vpp
N5
0,8Vpp
U5
21V
N2
115Vpp
N1
180Vpp
N7
150Vpp
80V
M3
390Vpp
M1
9Vpp
M2
1200Vpp
M4
70Vpp
U1
7V
U7
200V
U2
145V
H2
12Vpp
L1
12Vpp
L2
800Vpp
G2
4Vpp
L3
9Vpp
G1
3,7Vpp
1,7Vpp
48Vpp
U5
29V
U8
5V
H1
3,2Vpp
U3
5V
stby
H3
3,6Vpp
E5
1,8Vpp
1,2V
E1
3Vpp
17V
E4
12Vpp
3,0V
BS 15
VHF
UHF
IT 20
II 36
IL 14
IG01
LP 03
LP 04
RP 01
CP 03
BV 02
BV 03
BV 04
BV 05
BV 06
BV 07
BV 01
LL 46
LL 53
LL 55
LL 56
LL 32
LL 52
LG 11
BE 01
IR 01
R 73









Grundplatte
Piastra di base F 15-02
Basic P.C.B.
Lötseite – Lato saldature – Soldered side

△ = nur bei
solo con
only with

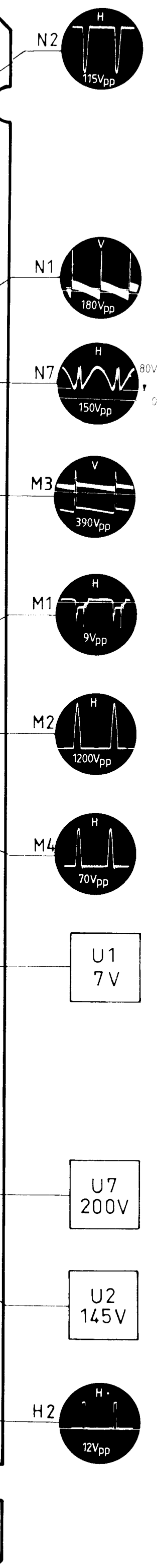
Color 3035
Spectra 3205

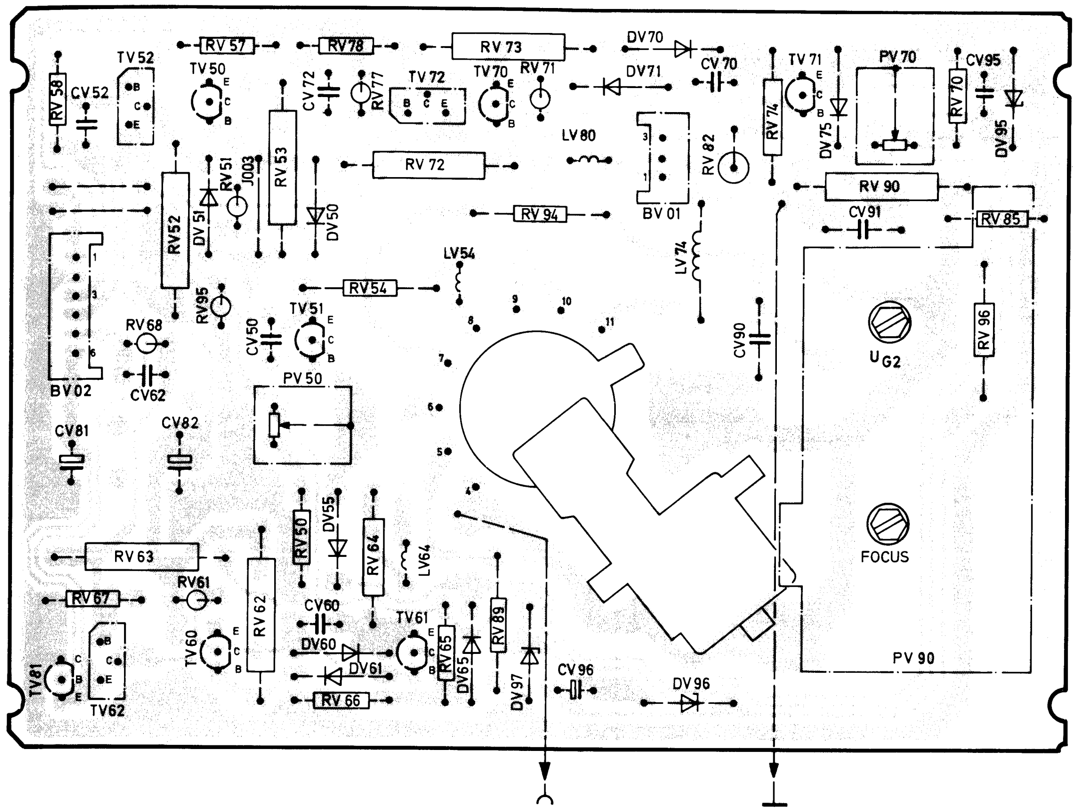
□ = nur bei
solo con
only with

Color 3038

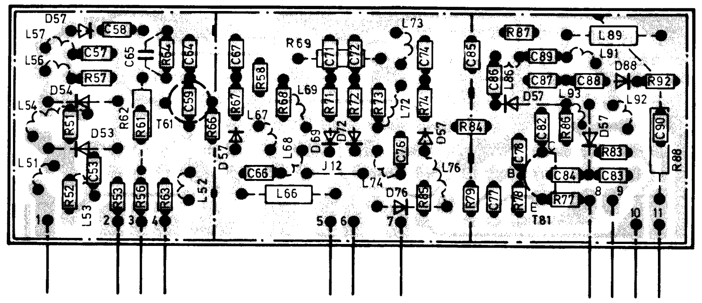
Color 3035
Spectra 3205 } Chassis F1
Color 3038 – Chassis F1

NORDMENDE

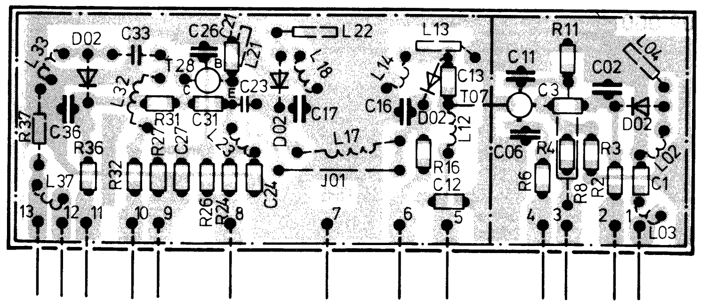

N2
115Vpp
N1
180Vpp
N7
150Vpp
M3
390Vpp
M1
9Vpp
M2
1200Vpp
M4
70Vpp
U1
7 V
U7
200V
U2
145V
H2
12Vpp


RV 57
RV78
RV 73
DV70
DV71
CV70
TV 71
PV70
CV95
TV52
TV50
CV52
RV 58
CV 72
RV77
TV 72
TV70
RV 71
RV 74
DV75
RV 70
DV95
LV80
RV 82
RV 72
RV 53
DV 50
RV 52
DV 51
RV 90
CV91
RV 94
BV 01
LV 74
RV 85
RV54
LV54
RV95
TV51
CV50
RV68
CV62
BV02
PV 50
CV81
CV82
CV90
RV 96
UG2
FOCUS
RV50
DV55
RV 64
LV64
RV 63
RV67
RV61
RV 62
CV60
DV60
DV61
TV61
RV65
DV65
RV89
DV97
CV 96
DV96
TV60
TV81
TV62
RV 66
PV 90

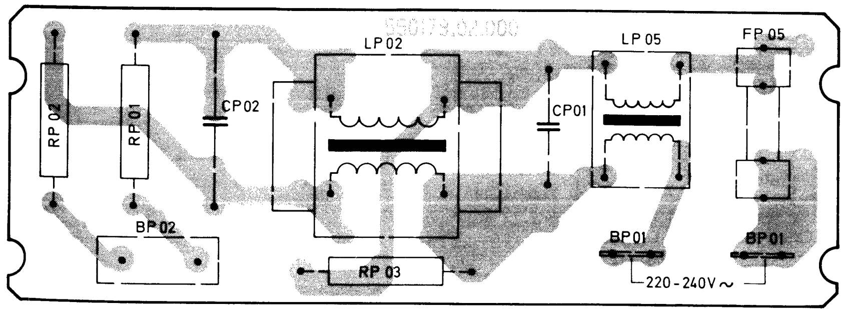
Bildrohranschluß-Platine
Piastra zoccolo cinescopio
P.C.B. CRT socket
592.977
Lötseite
Lato saldature
Soldered side


D57
L57
L56
C58
C57
R57
C65
R64
C64
L54
D54
R51
D53
C52
L51
C59
R69
R68
R72
C67
L69
L67
L68
C66
L66
J 12
L73
C74
R73
D72
D76
T61
R87
C89
L89
C87
C88
D88
R92
L93
L92
D57
R84
R83
C84
C82
R77
T81
R88
C90
R90

Leiterplatte VHF
Piastra VHF 276.798
P.C.B. VHF
Lötseite - Lato saldature - Soldered side


D02
C33
C26
L27
L22
L13
R11
C11
C02
L01
R37
C36
L32
T28
C23
L18
L14
C13
T07
C3
D02
R36
R31
C31
C17
C16
L12
L37
R32
R27
C27
R26
C21
L17
J01
R16
C12
C06
R6
R8
R3
R2
C1
L02
L03
13
12
11
10
9
8
7
6
5
4
3
2
1

Leiterplatte UHF
Piastra UHF 276.799
P.C.B. UHF
Lötseite - Lato saldature - Soldered side

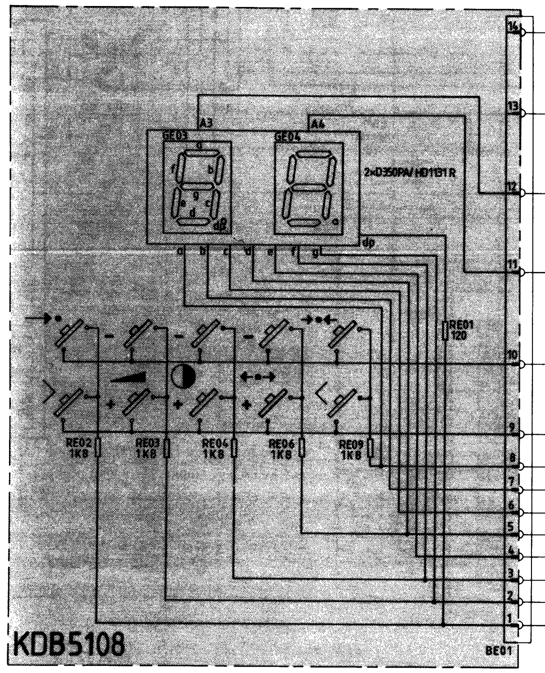

LP 02
LP 05
FP 05
RP 02
RP 01
CP02
CP01
BP 02
RP 03
BP01
BP01
220-240V ~

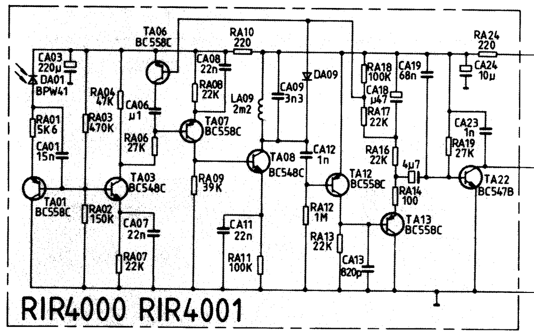
Leiterplatte Netzfilter
Piastra bobina d'arresto 527.436
P.C.B. Mains filter
Lötseite - Lato saldature - Soldered side

Color 3035 }
Spectra 3205 } Chassis F15M-01 ICC 5115 ML
Color 3038 - Chassis F15-02 785.522.B 01 115-01

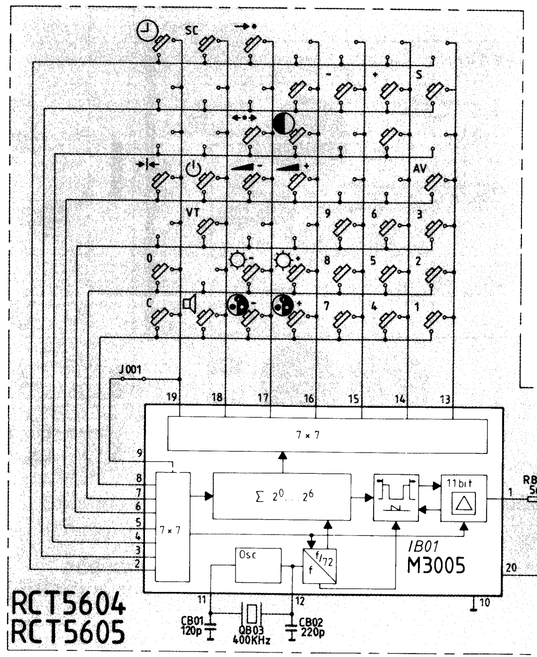
NORDMENDE „Chassis 02" 110°

Bedienteilplatte
Piastra sezione comandi 592.755
Control unit board

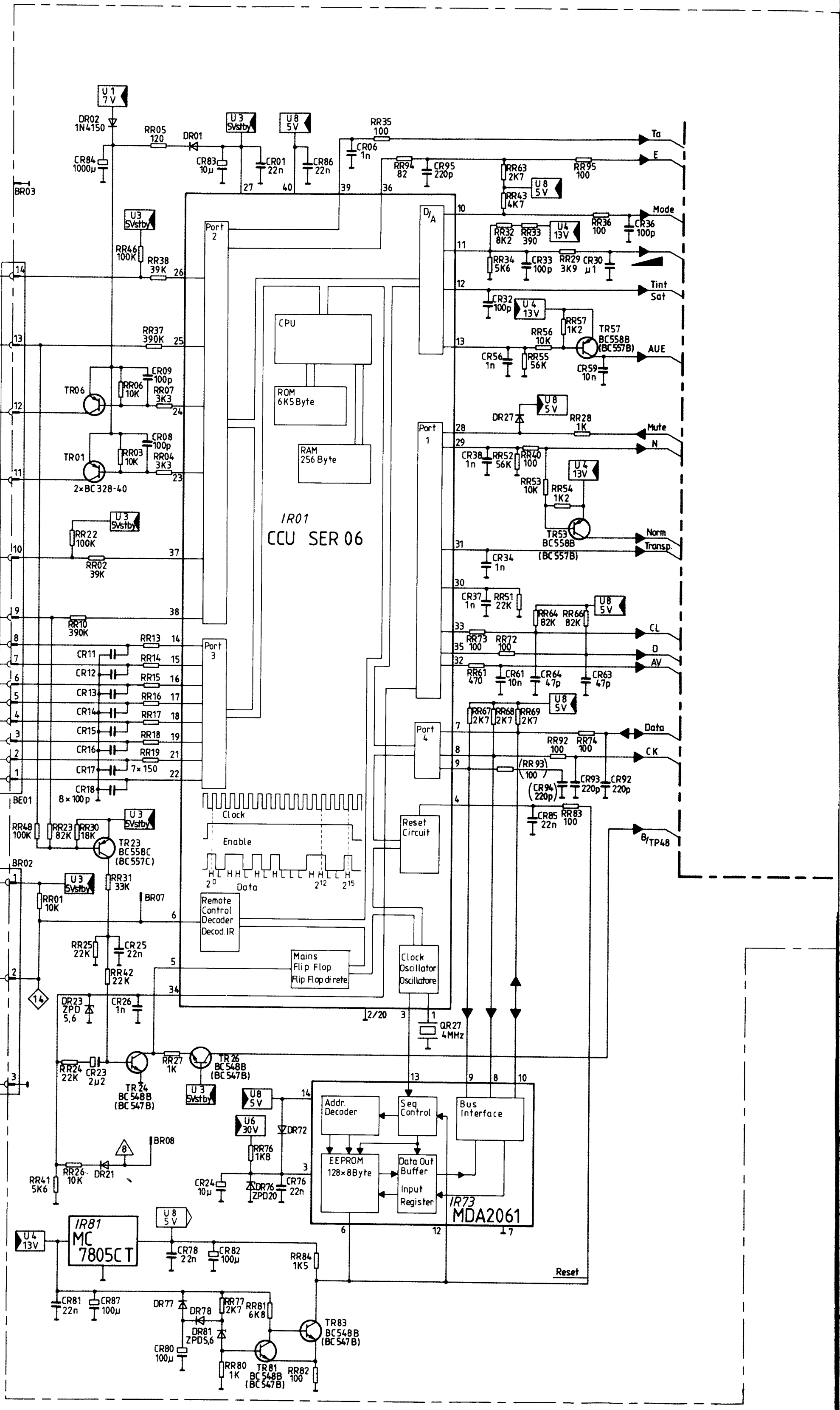

GE03
GE04
A3
A4
2xD350PA/HDT51R
dp
RE01
120
RE02
1K8
RE03
1K8
RE04
1K8
RE06
1K8
RE09
1K8
KDB5108
BE01


CA03
220µ
DA01
BPW41
TA06
BC558C
RA10
220
CA08
22n
RA08
22K
LA09
2m2
CA09
3n3
DA09
RA18
100K
CA19
68n
CA18
µ47
RA17
22K
RA24
220
CA24
10µ
RA04
47K
CA06
µ1
RA01
5K6
RA03
470K
RA06
27K
TA07
BC558C
CA23
1n
RA19
27K
CA01
15n
TA03
BC548C
RA09
39K
TA08
BC548C
CA12
1n
RA16
22K
TA12
BC558C
RA14
100
TA22
BC547B
TA01
BC558C
RA02
150K
CA07
22n
RA07
22K
CA11
22n
RA11
100K
RA12
1M
RA13
22K
CA13
820p
TA13
BC558C
RIR4000 RIR4001

Infrarot-Vorverstärker
Preamplificatore infrarossi 583.521 B
Infra-red pre-amplifier


SC
S
AV
VT
J001
19
18
17
16
15
14
13
7 x 7
Σ 2⁰ ... 2⁶
11bit
Osc
f/12
IB01
M3005
RB02
56
RB03
47
DB01
TSDS5410
TB01
BC368/E6350
CB04
220µ
RB04
10
6V
CB01
120p
DB03
400KHz
CB02
220p
RCT5604
RCT5605

Infrarot-Fernbedienung
Telecomando infrarossi
Infra-red remote control

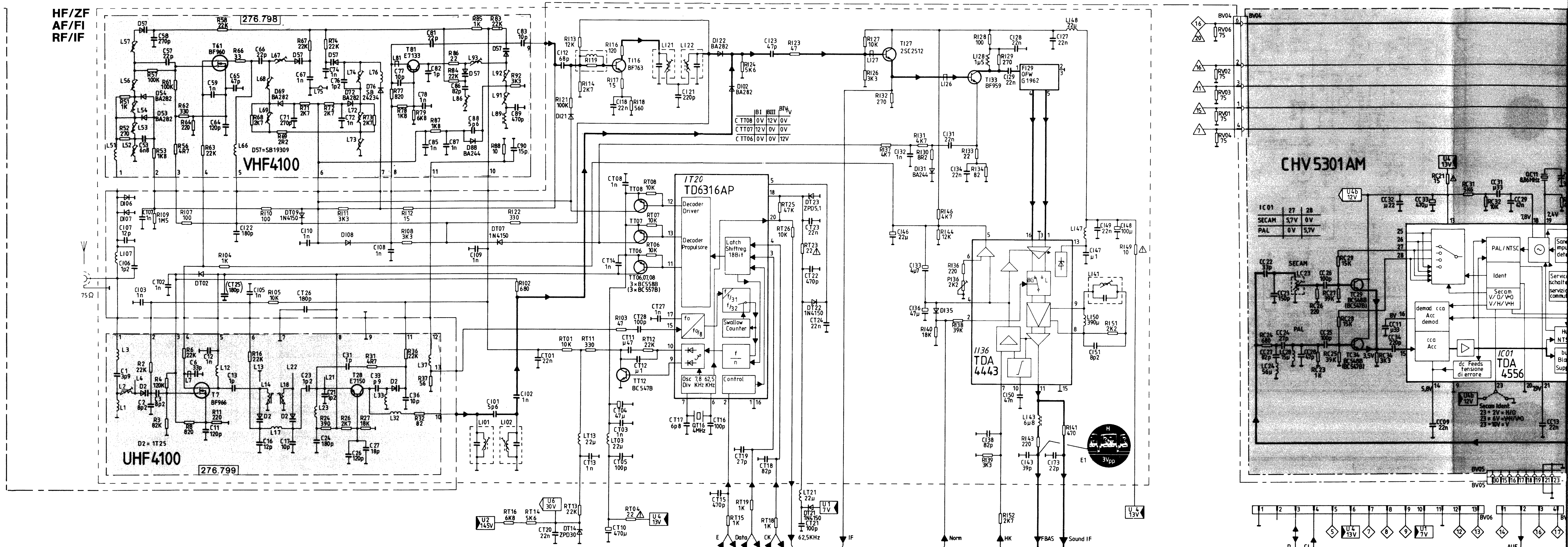

U1 7V
DR02 1N4150
RR05 120
DR01
U3 5Vstby
U8 5V
RR35 100
CR84 1000µ
CR83 10µ
CR01 22n
CR86 22n
CR06 1n
BR03
Ta
E
RR94 82
CR95 220p
RR63 2K7
RR95 100
RR43 4K7
U8 5V
Mode
RR46 100K
RR38 39K
Port 2
D/A
RR32 8K2
RR33 390
U4 13V
RR36 100
CR36 100p
RR34 5K6
CR33 100p
RR29 3K9
CR30 µ1
Tint
Sat
CR32 100p
U4 13V
RR57 1K2
TR57 BC558B (BC557B)
AUE
RR56 10K
CR56 1n
RR55 56K
CR59 10n
CPU
ROM 6K5 Byte
RAM 256 Byte
RR37 390K
TR06
RR06 10K
RR07 3K3
CR09 100p
TR01
RR03 10K
RR04 3K3
CR08 100p
2xBC 328-40
DR27
RR28 1K
Mute
N
Port 1
CR38 1n
RR52 56K
RR40 100
RR53 10K
RR54 1K2
TR53 BC558B (BC557B)
U4 13V
Norm
Transp
IR01
CCU SER 06
RR22 100K
RR02 39K
CR34 1n
CR37 1n
RR51 22K
RR64 82K
RR66 82K
U8 5V
CL
D
AV
RR10 390K
RR13
RR14
RR15
RR16
RR17
RR18
RR19
7x150
CR11
CR12
CR13
CR14
CR15
CR16
CR17
CR18 8x100p
Port 3
RR73 100
RR72 100
RR61 470
CR61 10n
CR64 47p
CR63 47p
RR67 2K7
RR68 2K7
RR69 2K7
U8 5V
Data
CK
RR92 100
RR74 100
RR93 100
CR94 220p
CR93 220p
CR92 220p
Port 4
RR85 22n
RR83 100
Clock
Enable
Data
Reset Circuit
TP48
RR48 100K
RR23 82K
RR30 18K
TR23 BC558C (BC557C)
BR02
RR31 33K
BR07
RR01 10K
Remote Control Decoder Decod IR
Mains Flip Flop Flip Flop di rete
Clock Oscillator Oscillatore
RR25 22K
CR25 22n
RR42 2K2
DR23 ZPD 5,6
CR26 1n
QR27 4MHz
RR24 22K
CR23 2µ2
TR24 BC548B (BC547B)
RR27 1K
TR26 BC548B (BC547B)
U3 5Vstby
U8 5V
U6 30V
DR72
RR76 1K8
Addr. Decoder
Seq. Control
Bus Interface
EEPROM 128x8Byte
Data Out Buffer
Input Register
IR73
MDA2061
BR08
RR41 5K6
RR26 10K
DR21
CR24 10µ
DR76 ZPD20
CR76 22n
U4 13V
IR81
MC 7805CT
U8 5V
CR78 22n
CR82 100µ
RR84 1K5
Reset
CR81 22n
CR87 100µ
DR77
DR78
RR77 2K7
RR81 6K8
DR81 ZPD5,6
TR83 BC548B (BC547B)
CR80 100µ
RR80 1K
TR81 BC548B (BC547B)
RR82 100

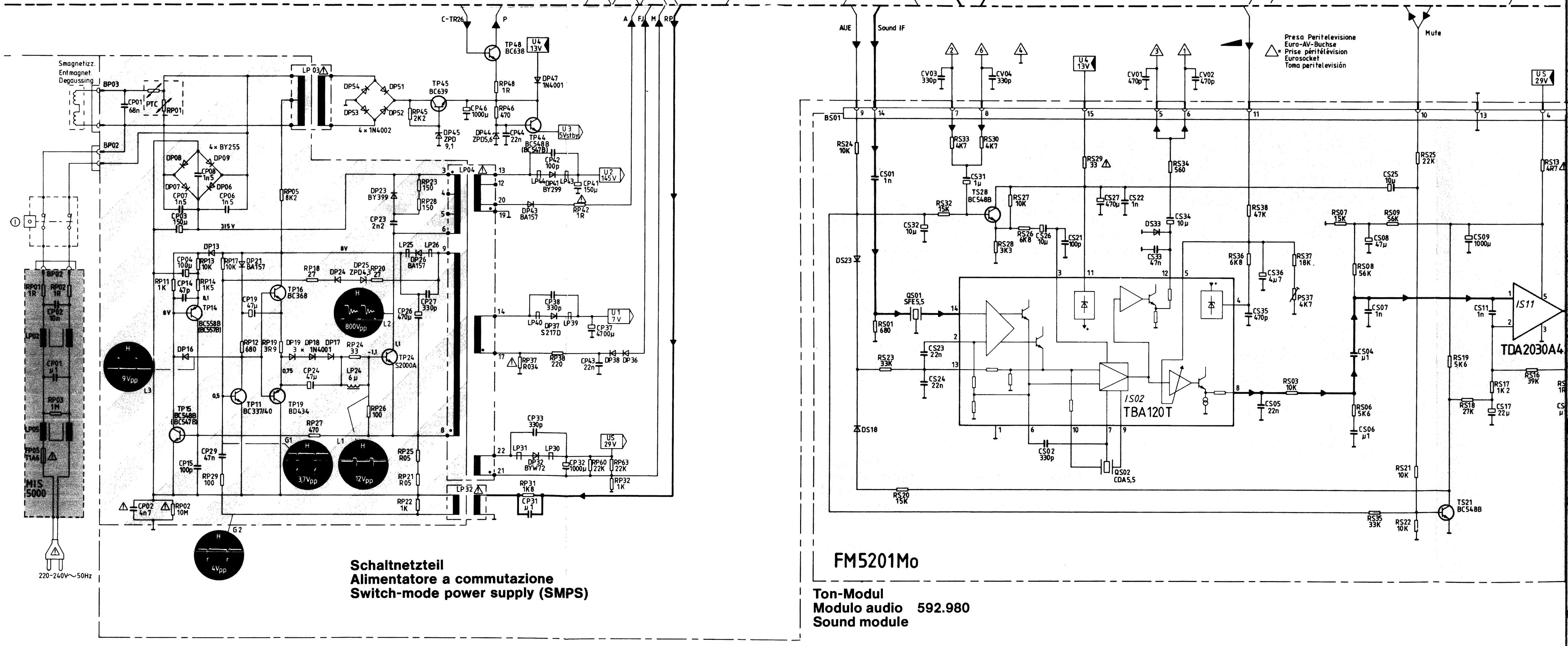
Computer Control 4
583.561

( ) = nur bei solo con only with — Color 3035 Spectra 3205

□ = nur bei solo con only with — Color 3038

Chroma-Video-Modul
Modulo crominanza video 592.730
Chroma video module


HF/ZF
AF/FI
RF/IF
VHF4100
UHF4100
276.798
276.799
TD6316AP
TDA 4443
CHV5301AM
TDA 4556
SECAM
PAL


MIS 5000
220-240V~50Hz
TBA120T
TDA2030A
FM5201Mo
Presa Peritelevisione
Euro-AV-Buchse
Prise péritélévision
Eurosocket
Toma peritelevisión

Schaltnetzteil
Alimentatore a commutazione
Switch-mode power supply (SMPS)

Ton-Modul
Modulo audio 592.980
Sound module

△ = Euro-AV-Buchse
Presa Peritelevisione
Eurosocket

△1	NF/AF 'R' ○→ BF 'D' 0,5 V RMS	△12	X
△2	NF/AF 'R' →○ BF 'D' 0,5 V RMS	△13	⊥ Video R
△3	NF/AF 'L' ○→ BF 'S' 0,5 V RMS	△14	X
△4	⊥ NF/AF BF	△15	Video R →○ 0,7 V RMS
△5	⊥ Video B	△16	Blanking →○ Spegnim. Video
△6	NF/AF 'L' →○ BF 'S' 0,5 V RMS	△17	⊥ Video
△7	Video B →○ 0,7 V RMS	△18	⊥ Blanking Spegnimento
△8	Mode AV ≙ 12 V	△19	Video ○→ 1 V_{pp}/75 Ω
△9	⊥ Video G/V	△20	Video →○ 1 V_{pp}/75 Ω
△10	X	△21	⊥ Chassis Telaio
△11	Video G/V →○ 0,7 V RMS		V RMS = V_{eff} V_{pp} = V_{ss}

Achtung!

Bei Arbeiten am Schaltnetzteil Trenntrafo verwenden, und Messungen in diesem Bereich gegen Masse des Schaltnetzteils (Emitter TP 15) ausführen.

Attenzione!

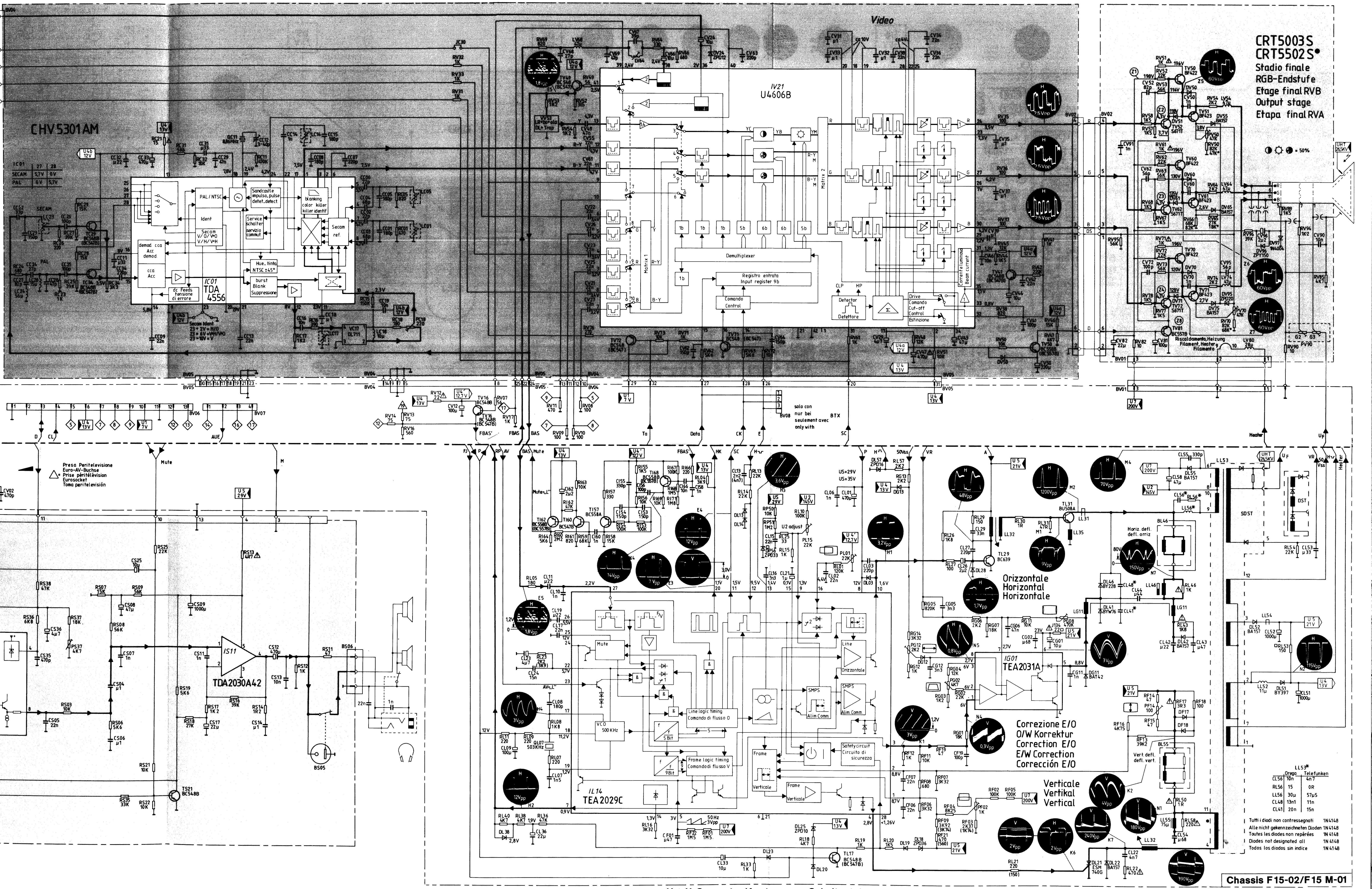
Per i lavori sull'alimentatore a commutazione, bisogna utilizzare un trasformatore separatore ed effettuare le misurazioni in questo ambito verso massa dell'alimentatore a commutazione (emettitore TP 15).

Attention!

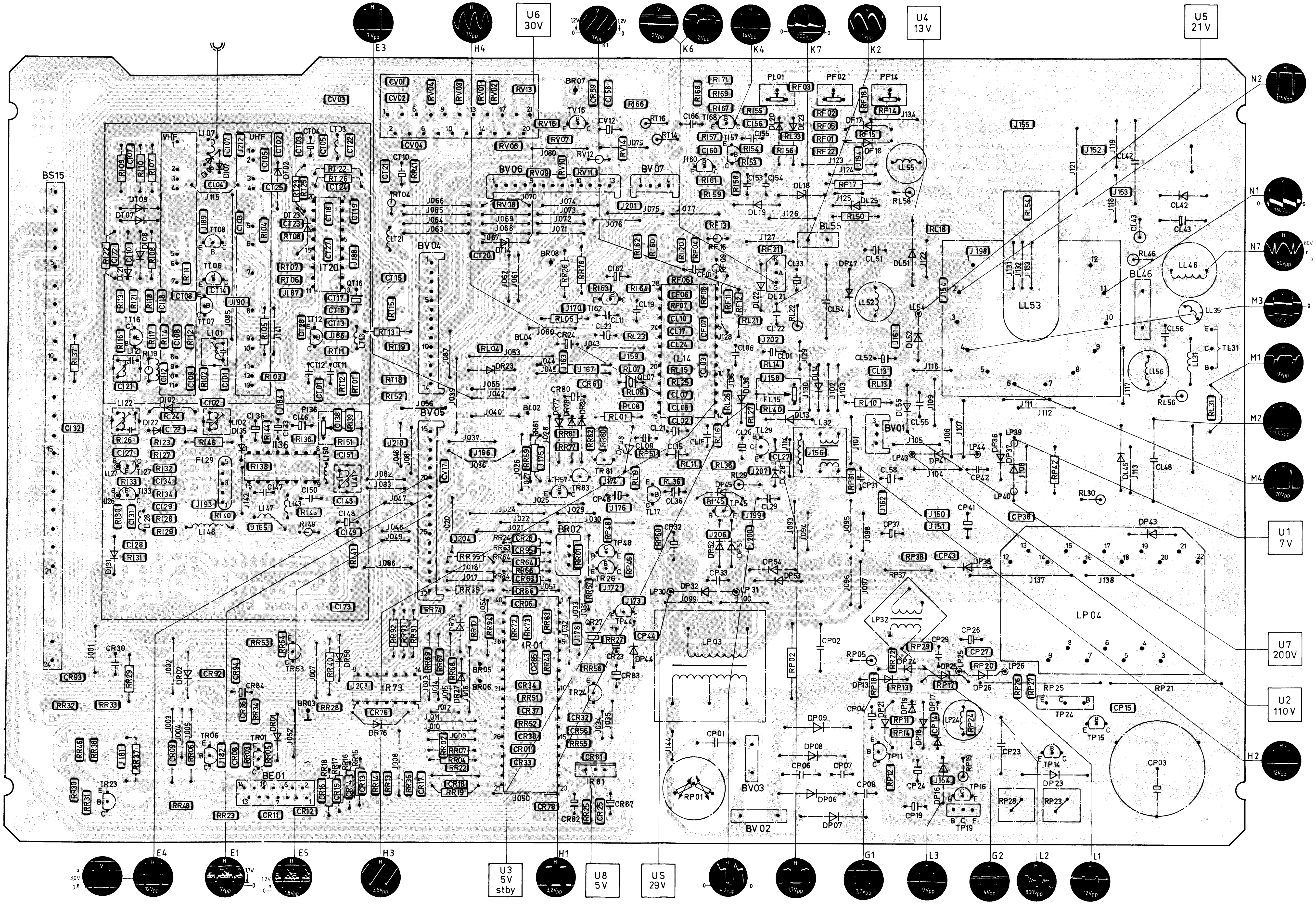
When carrying out repair work on components in the primary circuit of the switch mode power supply (SMPS), an isolating transformer must be employed. Measurements to be taken against ground within the primary side of the SMPS (emitter of TP 15).

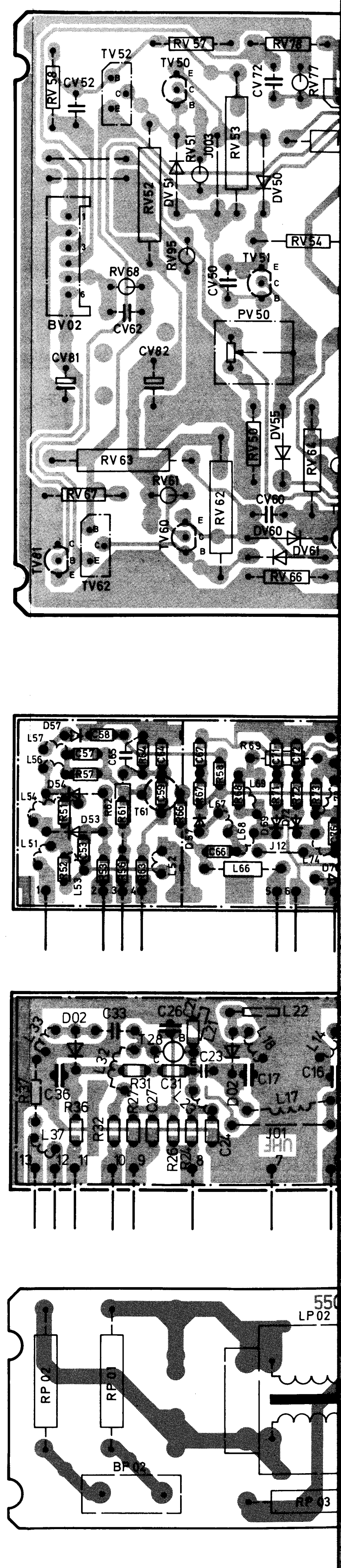
Chroma-Video-Modul
Modulo crominanza video 592.730
Chroma video module

Bildrohranschluß-Platine
Piastra zoccolo cinescopio 592.977
P.C.B. CRT socket


Video
CHV5301AM
IC01 TDA 4556
IV21 U4606B
CRT5003S
CRT5502S*
Stadio finale
RGB-Endstufe
Etage final RVB
Output stage
Etapa final RVA
Presa Peritelevisione
Euro-AV-Buchse
Prise péritélévision
Eurosocket
Toma peritelevisión
IS11 TDA2030A42
IL14 TEA2029C
IG01 TEA2031A
Orizzontale
Horizontal
Horizontale
Correzione E/O
O/W Korrektur
Correction E/O
E/W Correction
Corrección E/O
Verticale
Vertikal
Vertical
solo con nur bei seulement avec only with BTX
Riscaldamento, Heizung Filament, Heater, Filamento
Tutti i diodi non contrassegnati 1N4148
Alle nicht gekennzeichneten Dioden 1N4148
Toutes les diodes non repérées 1N4148
Diodes not designated all 1N4148
Todos los diodos sin indice 1N4148
LL53* Orega Telefunken
CL56 10n 4n7
RL56 15 0R
LL56 30µ 57µ5
CL48 13n1 11n
CL41 20n 15n
Chassis F15-02/F15 M-01

V + H-Generator/Ansteuerung Schaltnetzteil
Generatore V + O/azionamento aliment. commutat.
V + H generator/control of SMPS

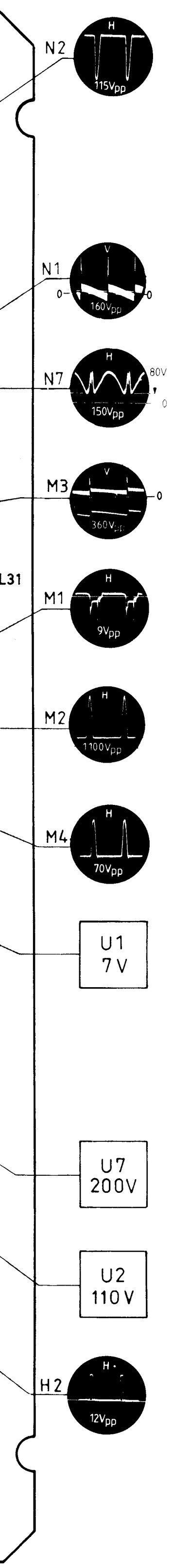

U6
30V
U4
13V
U5
21V
U1
7V
U7
200V
U2
110V
U3
5V
stby
U8
5V
US
29V
E3
H4
K1
K6
K4
K7
K2
N2
N1
N7
M3
M1
M2
M4
H2
E4
E1
E5
H3
H1
G1
L3
G2
L2
L1
BS15
BV04
BV05
BV06
BV07
BV01
BV02
BV03
BE01
BR02
LP03
LP04
LL53
LL46
BL46
BL55
IL14
IR01
IR73
IR81
IT20
VHF
UHF

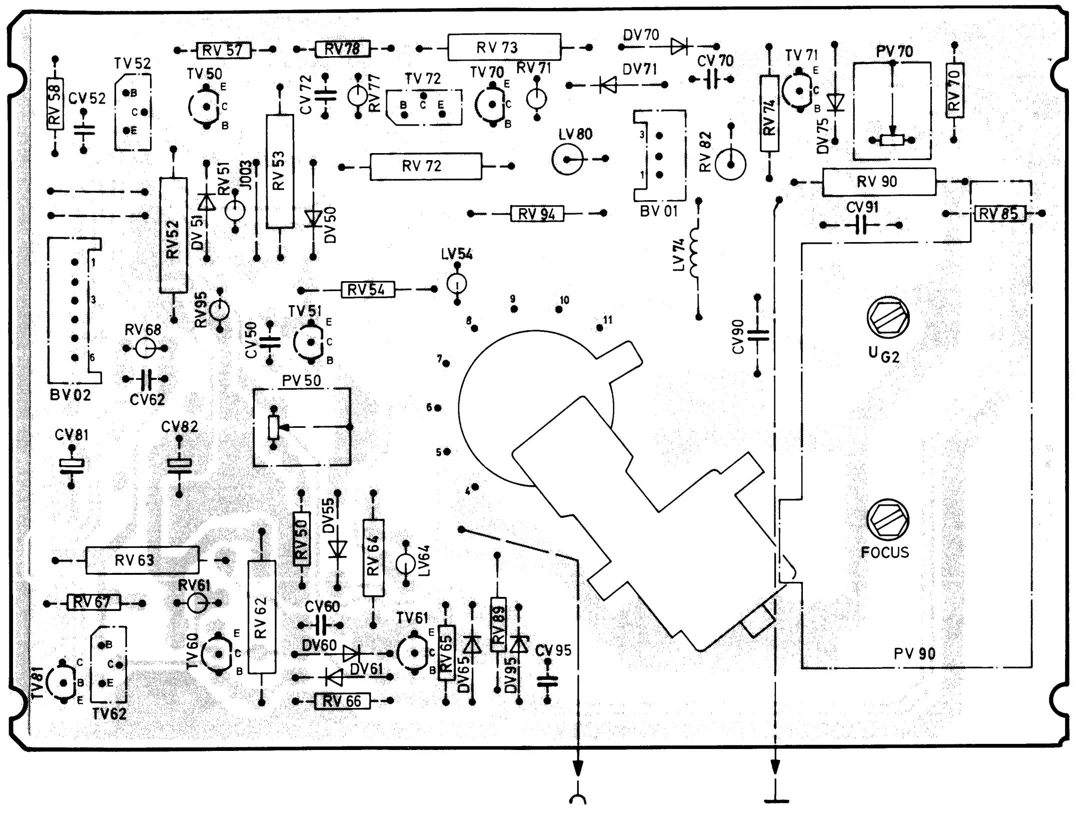

TV52
TV50
TV51
TV60
TV62
TV61
BV02
PV50
BF02
RP02
RP01
LP02
RP03

Grundplatte
Piastra di base F 16 M-01
Basic P.C.B.
Lötseite – Lato saldature – Soldered side

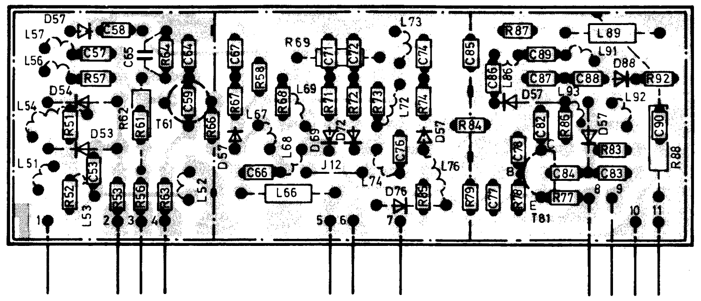
Color 3031 – Chassis F16

NORDMENDE

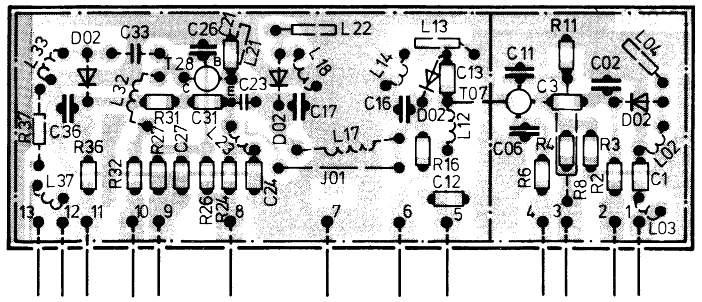

N2
115Vpp
N1
160Vpp
N7
150Vpp
80V
M3
360V
L31
M1
9Vpp
M2
1100Vpp
M4
70Vpp
U1 7V
U7 200V
U2 110V
H2
12Vpp


RV 57
RV 78
RV 73
DV 70
DV 71
CV 70
TV 71
PV 70
RV 70
RV 58
CV 52
TV 52
TV 50
TV 72
RV 53
RV 72
RV 90
CV 91
RV 85
RV 94
BV 01
LV 80
RV 52
RV 54
LV 54
LV 74
CV 90
U_G2
BV 02
CV 62
RV 68
TV 51
PV 50
CV 81
CV 82
RV 63
RV 62
RV 64
LV 64
FOCUS
RV 67
RV 61
CV 60
DV 60
DV 61
TV 61
DV 65
RV 89
DV 95
CV 95
RV 66
TV 60
TV 81
TV 62
PV 90

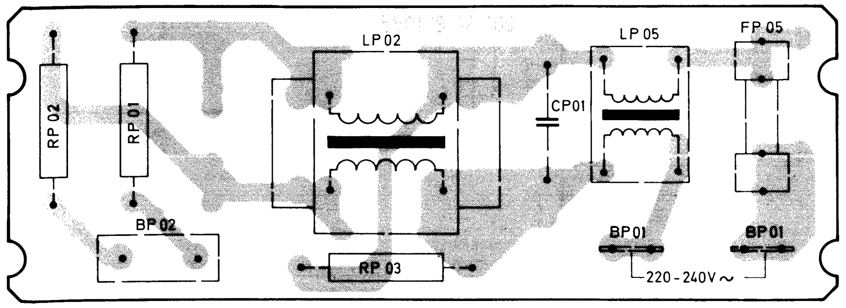
Bildrohranschluß-Platine
Piastra zoccolo cinescopio
P.C.B. CRT socket
592.977
Lötseite
Lato saldature
Soldered side


D57
L57
L56
D54
L54
D53
L51
L53
T61
L62
L68
L69
L66
J12
L73
L74
L72
L76
L89
L91
D88
L92
L93
D57
T81
R87
R92
R84
R77
R88

Leiterplatte VHF
Piastra VHF 276.798
P.C.B. VHF
Lötseite – Lato saldature – Soldered side


D02
C33
C26
L22
L13
R11
L33
L32
T28
C23
L18
L14
C13
C11
C02
L04
R37
C36
R36
R31
C31
C27
C17
C16
T07
C3
D02
L37
R32
R26
C24
L17
J01
R16
C12
C06
R6
R4
R8
R2
R3
C1
L02
L03

Leiterplatte UHF
Piastra UHF 276.799
P.C.B UHF
Lötseite – Lato saldature – Soldered side

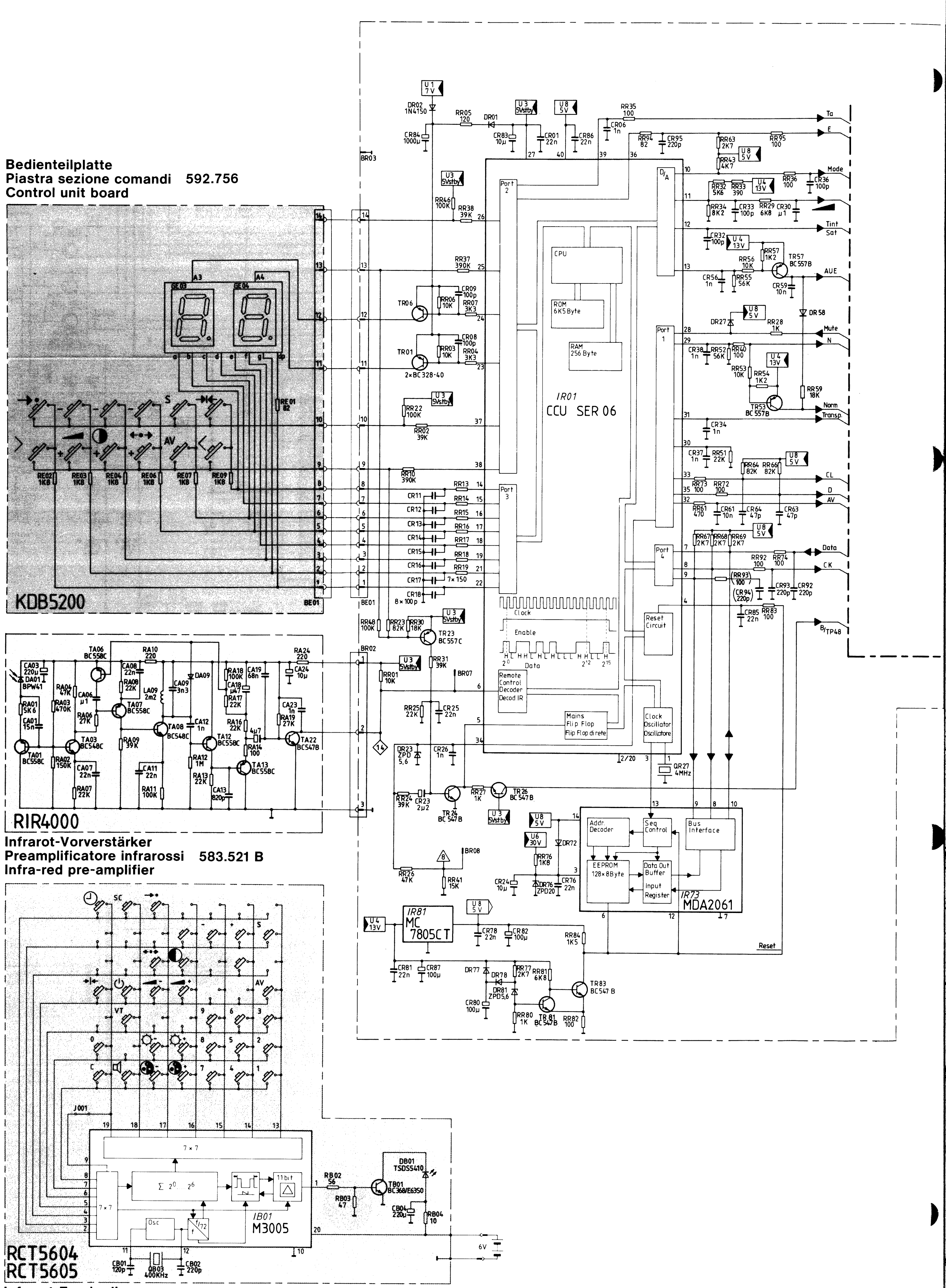

LP 02
LP 05
FP 05
CP01
RP 02
RP 01
BP 02
BP 01
BP 01
RP 03
220–240V ~

Leiterplatte Netzfilter
Piastra bobina d'arresto 527.436
P.C.B. Mains filter
Lötseite – Lato saldature – Soldered side

Color 3031 – Chassis F16M-01 ICC 5116 MM

NORDMENDE

„Chassis 01" 90°


KDB5200
BE01
RE01
RE02
RE03
RE04
RE06
RE07
RE09
AV
S
RIR4000
DA01 BPW41
TA01
TA03
TA06
TA07
TA08
TA12
TA13
TA22
RCT5604
RCT5605
J001
7×7
IB01
M3005
DB01 TSDS5410
TB01
QB03 400KHz
6V
IR01
CCU SER 06
CPU
ROM 6K5 Byte
RAM 256 Byte
Port 1
Port 2
Port 3
Port 4
D/A
Clock
Enable
Data
Reset Circuit
Remote Control Decoder Decod IR
Mains Flip Flop
Clock Oscillator
QR27 4MHz
Addr. Decoder
Seq Control
Bus Interface
EEPROM 128×8 Byte
Data Out Buffer
Input Register
IR73
MDA2061
IR81
MC 7805CT
TR01
TR06
TR23
TR24
TR26
TR53
TR57
TR83
Ta
E
Mode
Tint
Sat
AUE
Mute
N
Norm
Transp
CL
D
AV
Data
CK
B/TP48
Reset

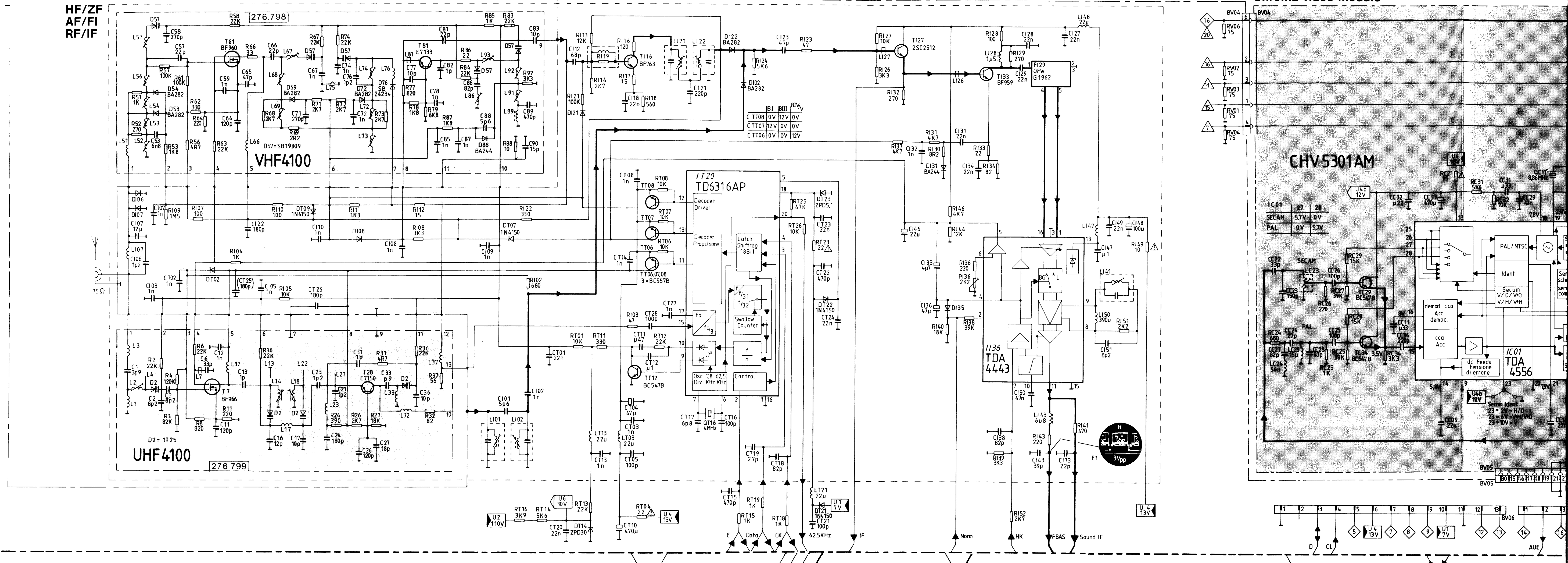
Bedienteilplatte
Piastra sezione comandi 592.756
Control unit board

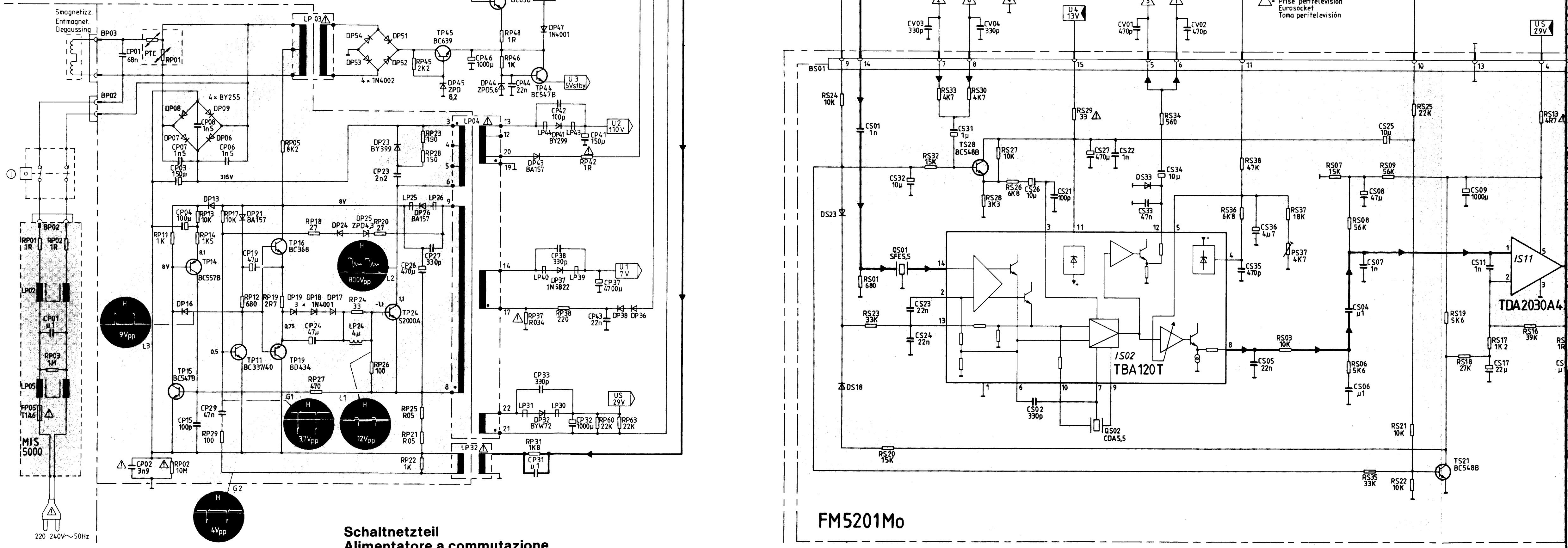
Infrarot-Vorverstärker
Preamplificatore infrarossi 583.521 B
Infra-red pre-amplifier

Infrarot-Fernbedienung
Telecomando infrarossi
Infra-red remote control

Computer Control 4
583.561

Chroma-Video-Modul
Modulo crominanza video 592.730
Chroma video module


HF/ZF
AF/FI
RF/IF
276.798
VHF4100
UHF4100
276.799
IT20
TD6316AP
Decoder Driver
Decoder Propulsore
Latch Shiftreg 18Bit
Swallow Counter
Control
IT36
TDA 4443
CHV5301AM
IC01
TDA 4556
PAL/NTSC
Ident
SECAM
PAL
Norm
HK
FBAS
Sound IF
AUE
Data
IF


Smagnetizz. Entmagnet. Degaussing
PTC
MIS 5000
220-240V~50Hz
9Vpp
600Vpp
3,7Vpp
12Vpp
4Vpp
Presa Peritelevisione Euro-AV-Buchse Prise péritélévision Eurosocket Toma peritelevisión
Sound IF
Mute
IS02
TBA120T
IS11
TDA2030A
FM5201Mo

Schaltnetzteil
Alimentatore a commutazione
Switch-mode power supply (SMPS)

Ton-Modul
Modulo audio 592.980
Sound module

△ = Euro-AV-Buchse
Presa Peritelevisione
Eurosocket

- △1 NF/AF 'R' ⊖→ BF 'D' 0,5 V RMS
- △2 NF/AF 'R' ⊖← BF 'D' 0,5 V RMS
- △3 NF/AF 'L' ⊖→ BF 'S' 0,5 V RMS
- △4 ⏚ NF/AF BF
- △5 ⏚ Video B
- △6 NF/AF 'L' ⊖← BF 'S' 0,5 V RMS
- △7 Video B ⊖← 0,7 V RMS
- △8 Mode AV ≙ 12 V
- △9 ⏚ Video G/V
- △10 X
- △11 Video G/V ⊖← 0,7 V RMS
- △12 X
- △13 ⏚ Video R
- △14 X
- △15 Video R ⊖← 0,7 V RMS
- △16 Blanking ⊖← Spegnim. Video
- △17 ⏚ Video
- △18 ⏚ Blanking Spegnimento
- △19 Video ⊖→ 1 $V_{pp}/75\ \Omega$
- △20 Video ⊖← 1 $V_{pp}/75\ \Omega$
- △21 ⏚ Chassis Telaio

V RMS = V_{eff}
$V_{pp} = V_{ss}$

Achtung!

Bei Arbeiten am Schaltnetzteil Trenntrafo verwenden, und Messungen in diesem Bereich gegen Masse des Schaltnetzteils (Emitter TP 15) ausführen.

Attenzione!

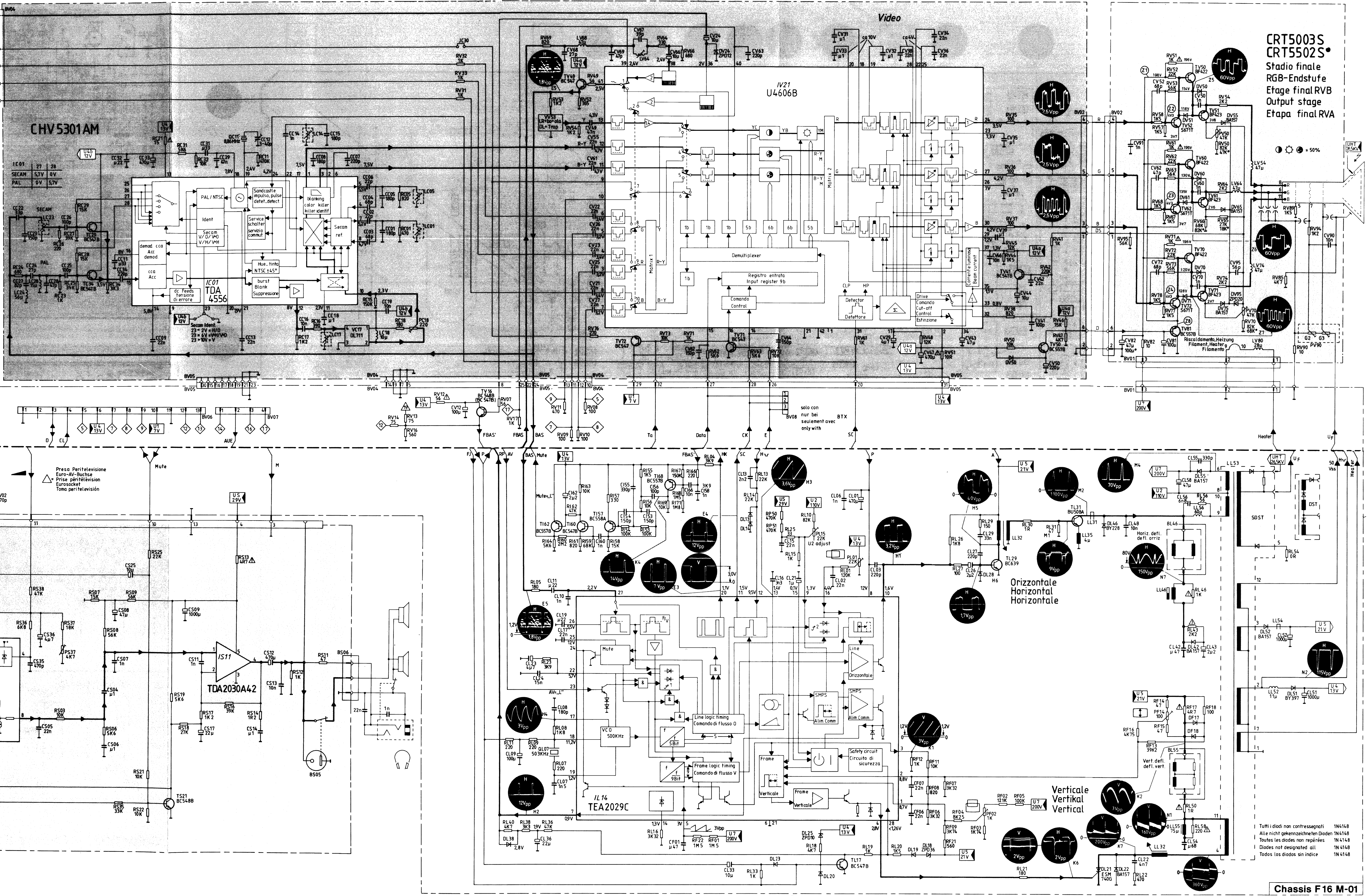
Per i lavori sull'alimentatore a commutazione, bisogna utilizzare un trasformatore separatore ed effettuare le misurazioni in questo ambito verso massa dell'alimentatore a commutazione (emettitore TP 15).

Attention!

When carrying out repair work on components in the primary circuit of the switch mode power supply (SMPS), an isolating transformer must be employed. Measurements to be taken against ground within the primary side of the SMPS (emitter of TP 15).

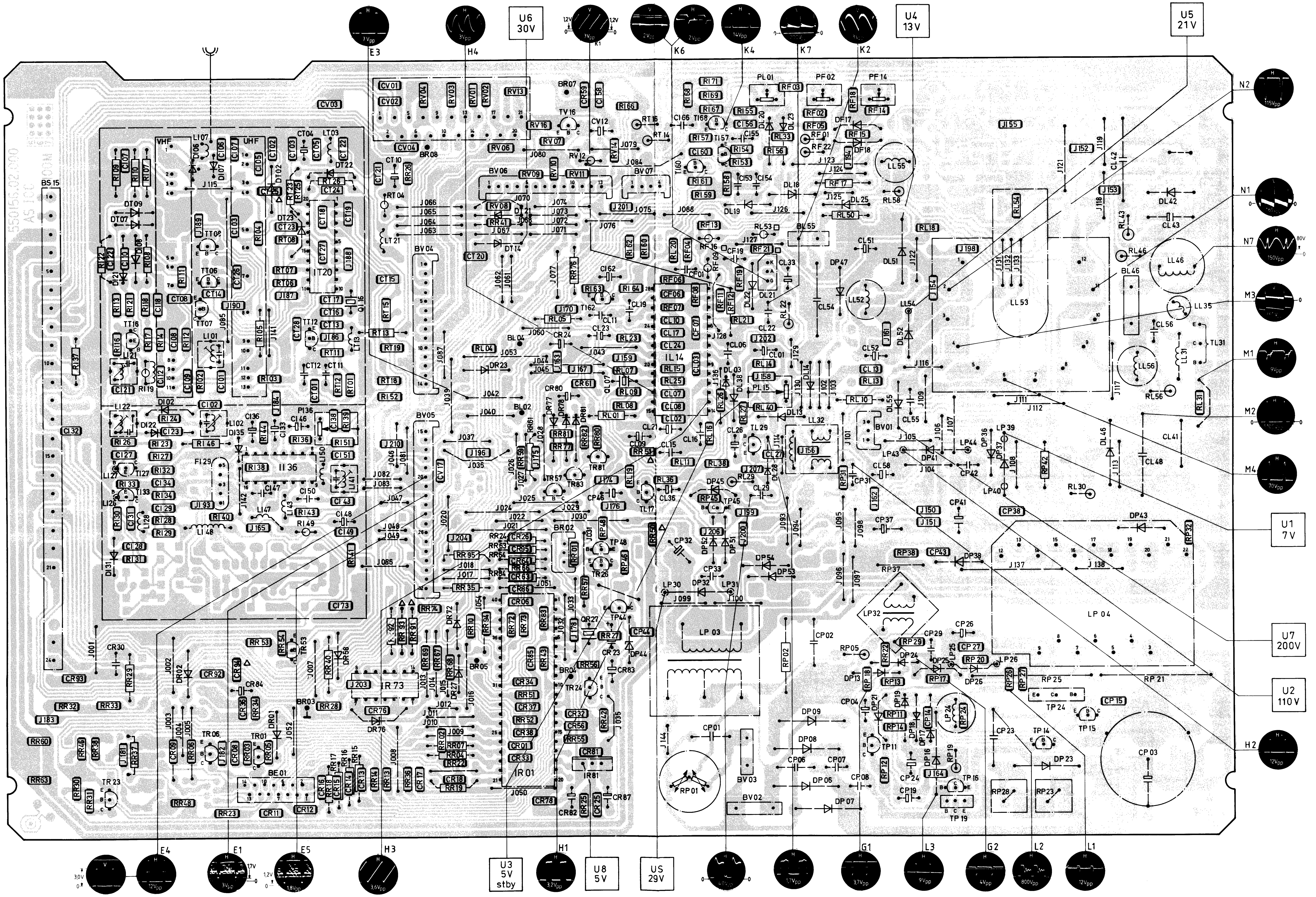
Chroma-Video-Modul
Modulo crominanza video 592.730
Chroma video module

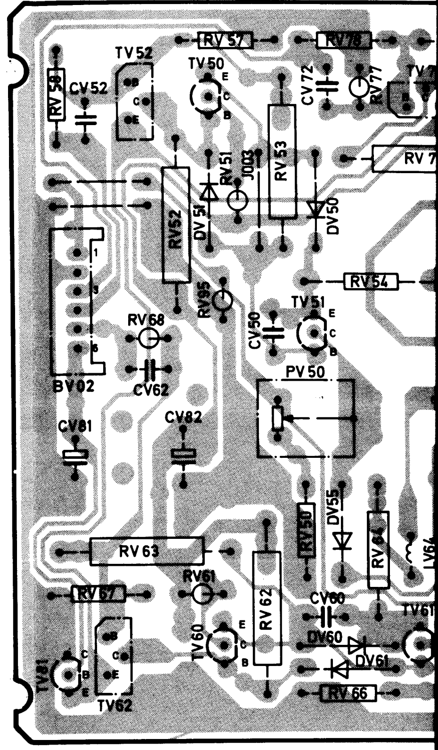
Bildrohranschluß-Platine
Piastra zoccolo cinescopio 592.977
P.C.B. CRT socket

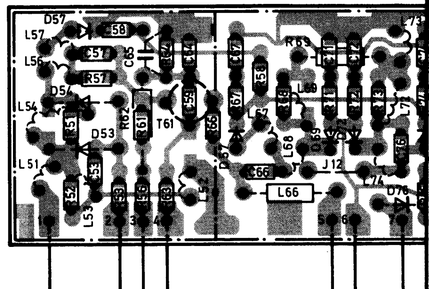

CHV5301AM
Video
IV21
U4606B
IC01
TDA 4556
CRT5003S
CRT5502S•
Stadio finale
RGB-Endstufe
Etage final RVB
Output stage
Etapa final RVA
Matrix 1
Matrix 2
Demultiplexer
Registro entrata
Input register 9b
Comando Control
Detector
Detettore
Drive Comando
Cut-off Control
Estinzione
Corrente luminosa
Beam current
PAL/NTSC
Ident
Secam V/0/V+0 V/H/V+H
Sandcastle impulso, pulse detet.-detect
Service schalter servizio commut.
blanking color killer killer identif
Secam ref
Hue. tinta NTSC ±45°
burst Blank Suppressione
dc Feeds tensione di errore
demod cca Acc demod
cca Acc
Secam Ident
Riscaldamento, Heizung Filament, Heater Filamento
solo con nur bei seulement avec only with BTX
Presa Peritelevisione
Euro-AV-Buchse
Prise péritélévision
Eurosocket
Toma peritelevisión
IS11
TDA2030A42
IL14
TEA2029C
Mute
VCO 500KHz
Line logic timing Comando di flusso O
Frame logic timing Comando di flusso V
SMPS Alim Comm
Line Orizzontale
Safety circuit Circuito di sicurezza
Frame Verticale
Orizzontale
Horizontal
Horizontale
Verticale
Vertikal
Vertical
Horiz. defl. defl. orriz
Vert. defl. defl. vert
SDST
DST
Tutti i diodi non contressegnati 1N4148
Alle nicht gekennzeichneten Dioden 1N4148
Toutes les diodes non repérées 1N4148
Diodes not designated all 1N4148
Todos los diodos sin indice 1N4148

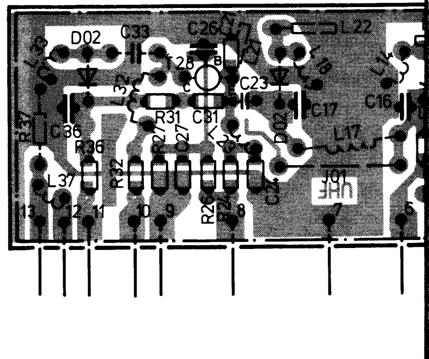
Chassis F16 M-01

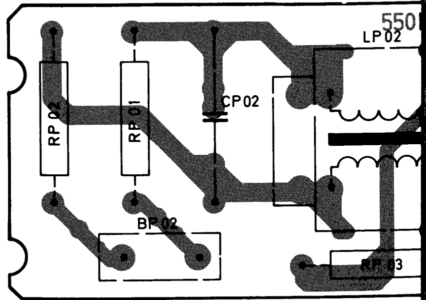
V + H-Generator/Ansteuerung Schaltnetzteil
Generatore V + O/azionamento aliment. commutat.
V + H generator/control of SMPS


E3
7Vpp
H4
3Vpp
U6
30V
12V
K1
3Vpp
2Vpp
K6
K4
14Vpp
K7
K2
U4
13V
U5
21V
N2
115Vpp
N1
N7
150Vpp
80V
M3
M1
9Vpp
M2
M4
70Vpp
U1
7V
U7
200V
U2
110V
H2
12Vpp
E4
12Vpp
3,0V
E1
3Vpp
1,7V
E5
1,2V
1,8Vpp
H3
3,6Vpp
U3
5V
stby
H1
3,2Vpp
U8
5V
US
29V
4Vpp
12Vpp
G1
3,7Vpp
L3
9Vpp
G2
4Vpp
L2
800Vpp
L1
12Vpp
VHF
UHF
IT20
IL14
II 36
IR 73
IR 01
LP 03
LP 04
LL 53
CP 03
BS 15
BV 04
BV 05
BV 06
BV 07
BV 01
BV 02
BV 03
BE 01


TV52
RV57
RV78
TV50
CV52
CV72
RV52
RV53
BV02
CV50
TV51
PV50
RV54
CV81
CV82
RV63
RV61
RV62
TV60
TV61
TV62
RV66




D02
C33
L22
L37
R31
C23
C17


LP02
CP02
BP02

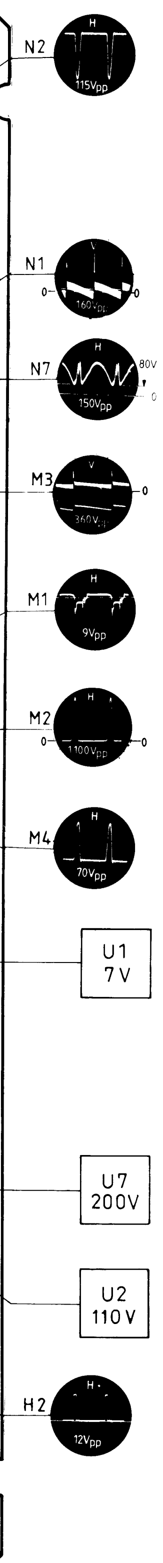
Grundplatte
Piastra di base F 16-02
Basic P.C.B.
Lötseite – Lato saldature – Soldered side

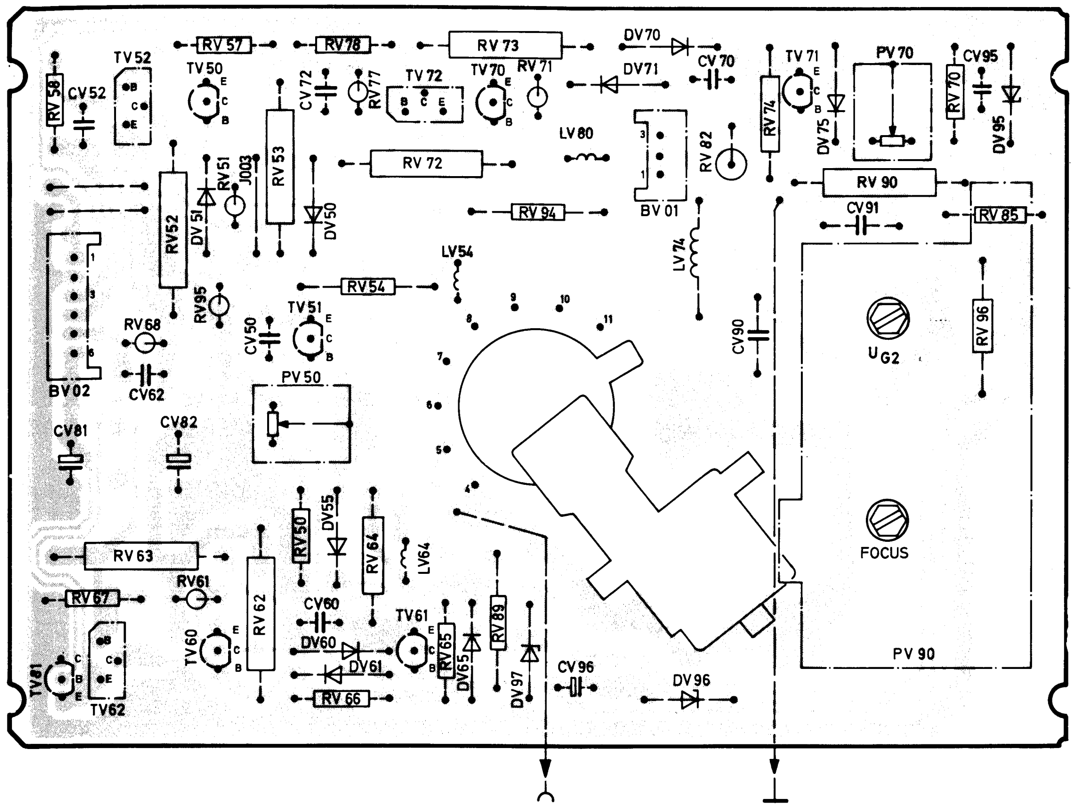
△ = nur bei
solo con
only with Color 3031

□ = nur bei
solo con
only with Color 3201

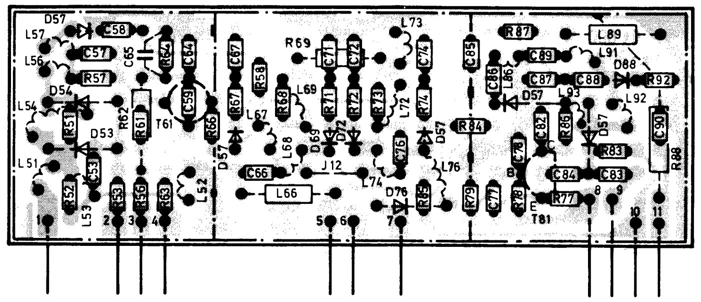
Color 3031 – Chassis F
Spectra 3201 – Chassis F

NORDMENDE

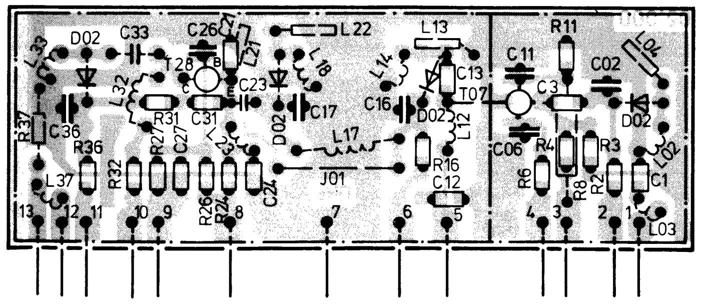

N2
115Vpp
N1
160Vpp
N7
150Vpp
80V
M3
360Vpp
M1
9Vpp
M2
1100Vpp
M4
70Vpp
U1
7V
U7
200V
U2
110V
H2
12Vpp


TV52
TV50
RV57
RV78
RV73
DV70
DV71
CV70
TV71
PV70
CV95
RV58
CV52
TV72
TV70
RV71
RV74
RV70
DV95
DV75
LV80
RV82
RV72
RV90
RV51
DV51
J003
RV53
DV50
RV52
RV94
BV01
CV91
RV85
LV54
LV74
RV54
RV95
RV68
TV51
CV50
CV90
UG2
RV96
BV02
CV62
PV50
CV81
CV82
RV50
DV55
RV64
LV64
FOCUS
RV63
RV67
RV61
CV60
DV60
DV61
TV61
RV65
DV65
RV89
DV97
TV60
RV62
CV96
DV96
PV90
TV01
TV62
RV66

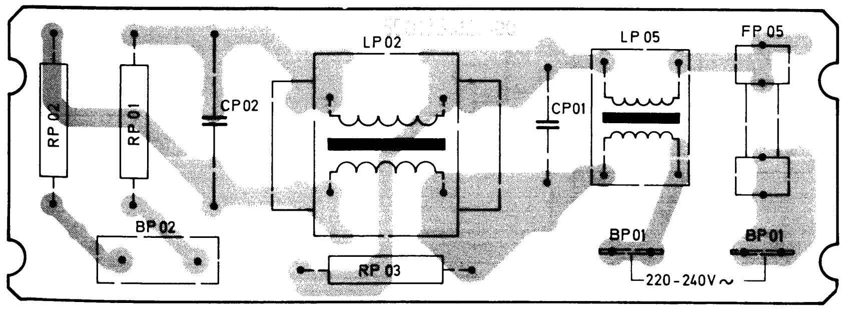
Bildrohranschluß-Platine
Piastra zoccolo cinescopio
P.C.B. CRT socket
592.977
Lötseite
Lato saldature
Soldered side


D57
C58
L57
L56
C57
R57
C65
C54
C67
R69
C71
C72
L73
R87
L89
L91
D88
C89
C87
C88
R92
L92
D56
R51
L54
D53
R62
R61
R66
T61
L67
R67
R68
R69
L68
R70
R71
D69
R72
L72
D57
R74
R86
C86
D57
C90
R88
L51
C66
L66
J12
L74
D76
L76
R76
R79
R77
R83
C84
C83
R77
T81
1 2 3 4
5 6
8 9 10 11

Leiterplatte VHF
Piastra VHF 276.798
P.C.B. VHF
Lötseite – Lato saldature – Soldered side


D02
C33
C26
L22
L13
R11
T28
C23
C17
C16
D02
C13
T07
C11
C02
C3
R37
C36
R36
L32
R31
C31
L17
J01
R16
C12
C06
R4
R3
D02
C1
L37
R32
R27
C27
R26
R24
R8
R6
R2
L03
13 12 11 10 9 8 7 6 5 4 3 2 1

Leiterplatte UHF
Piastra UHF 276.799
P.C.B UHF
Lötseite – Lato saldature – Soldered side

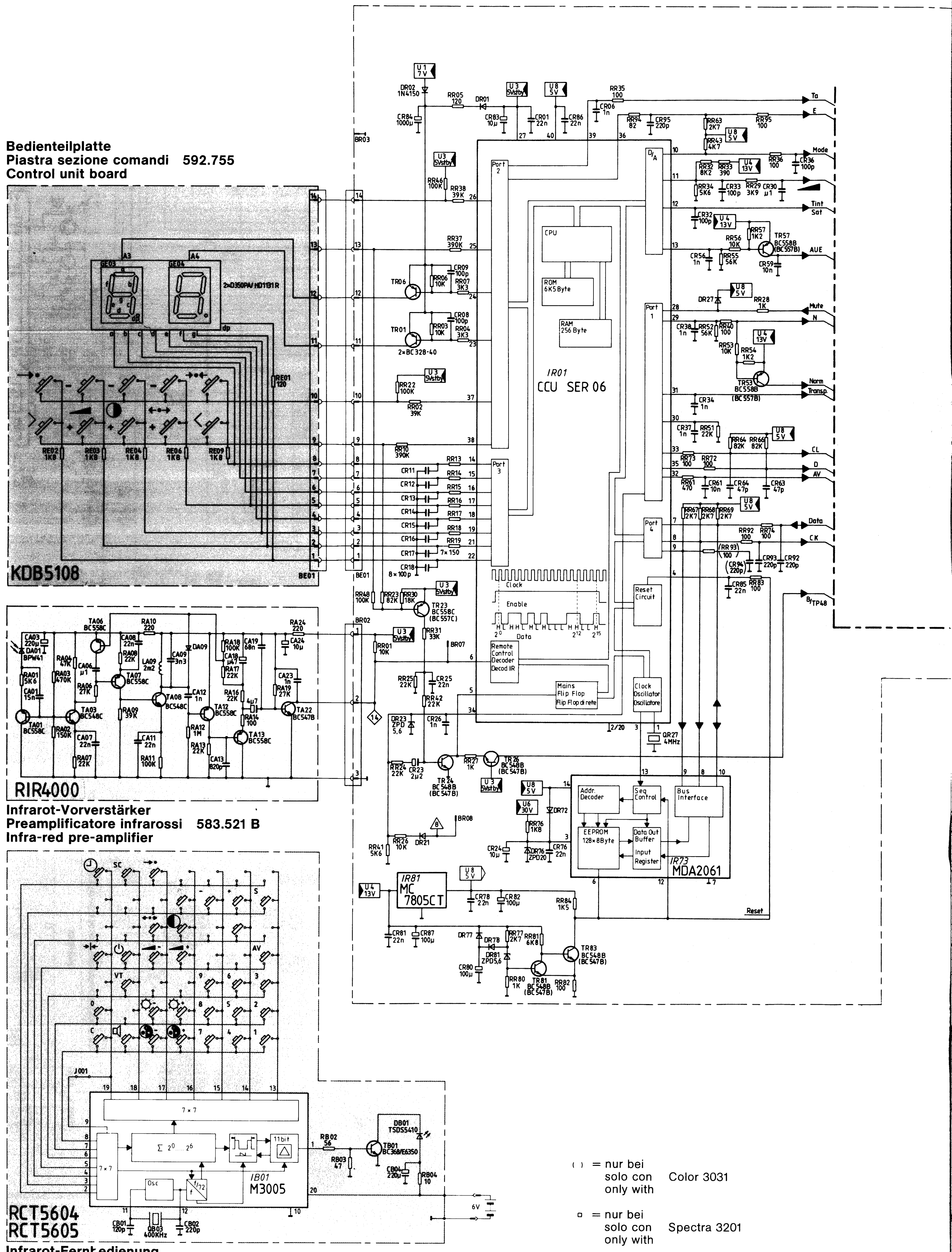

LP02
LP05
FP05
RP02
RP01
CP02
CP01
BP02
BP01
BP01
RP03
220-240V~

Leiterplatte Netzfilter
Piastra bobina d'arresto 527.436
P.C.B. Mains filter
Lötseite – Lato saldature – Soldered side

Color 3031 – Chassis F16M-02 ICC 5116 MM
Spectra 3201 – Chassis F16-02 785.526.B 01 116-01

NORDMENDE „Chassis 02" 90°

Bedienteilplatte
Piastra sezione comandi 592.755
Control unit board


KDB5108
2×D350PA/HD1131R
RE01 120
RE02 1K8
RE03 1K8
RE04 1K8
RE06 1K8
RE09 1K8
BE01
RIR4000
TA06 BC558C
TA01 BC558C
TA02 BC548C
TA07 BC558C
TA08 BC548C
TA12 BC558C
TA13 BC558C
TA22 BC547B
DA01 BPW41
DA09
RCT5604
RCT5605
IB01
M3005
7×7
Osc
11bit
J001
CB01 120p
QB03 400KHz
CB02 220p
DB01 TSDS5410
TB01 BC368/E6350
RB02 56
RB03 47
RB04 10
6V
SC
AV
VT
IR01
CCU SER 06
CPU
ROM 6K5 Byte
RAM 256 Byte
Port 1
Port 2
Port 3
Port 4
D/A
Clock
Enable
Data
Remote Control Decoder Decod IR
Mains Flip Flop Flip Flop di rete
Clock Oscillator Oscillatore
Reset Circuit
QR27 4MHz
IR73
MDA2061
Addr. Decoder
Seq Control
Bus Interface
EEPROM 128×8Byte
Data Out Buffer
Input Register
IR81
MC 7805CT
TR01
TR06
2×BC328-40
TR23 BC558C (BC557C)
TR24 BC548B (BC547B)
TR26 BC548B (BC547B)
TR53 BC558B (BC557B)
TR57 BC558B (BC557B)
TR81 BC548B (BC547B)
TR83 BC548B (BC547B)
DR02 1N4150
U1 7V
U3 5Vstby
U8 5V
U4 13V
U6 30V
Ta
E
Mode
Tint
Sat
AUE
Mute
N
Norm
Transp
CL
D
AV
Data
CK
TP48
Reset

Infrarot-Vorverstärker
Preamplificatore infrarossi 583.521 B
Infra-red pre-amplifier

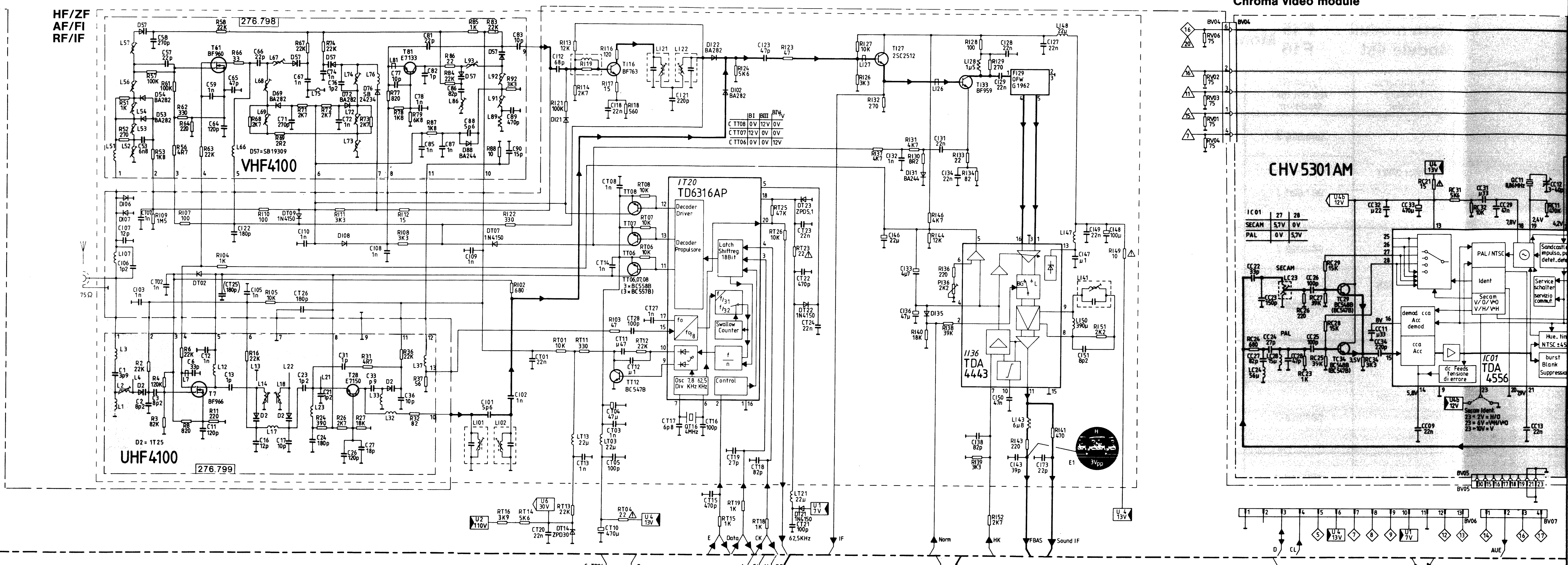
Infrarot-Fernbedienung
Telecomando infrarossi
Infra-red remote control

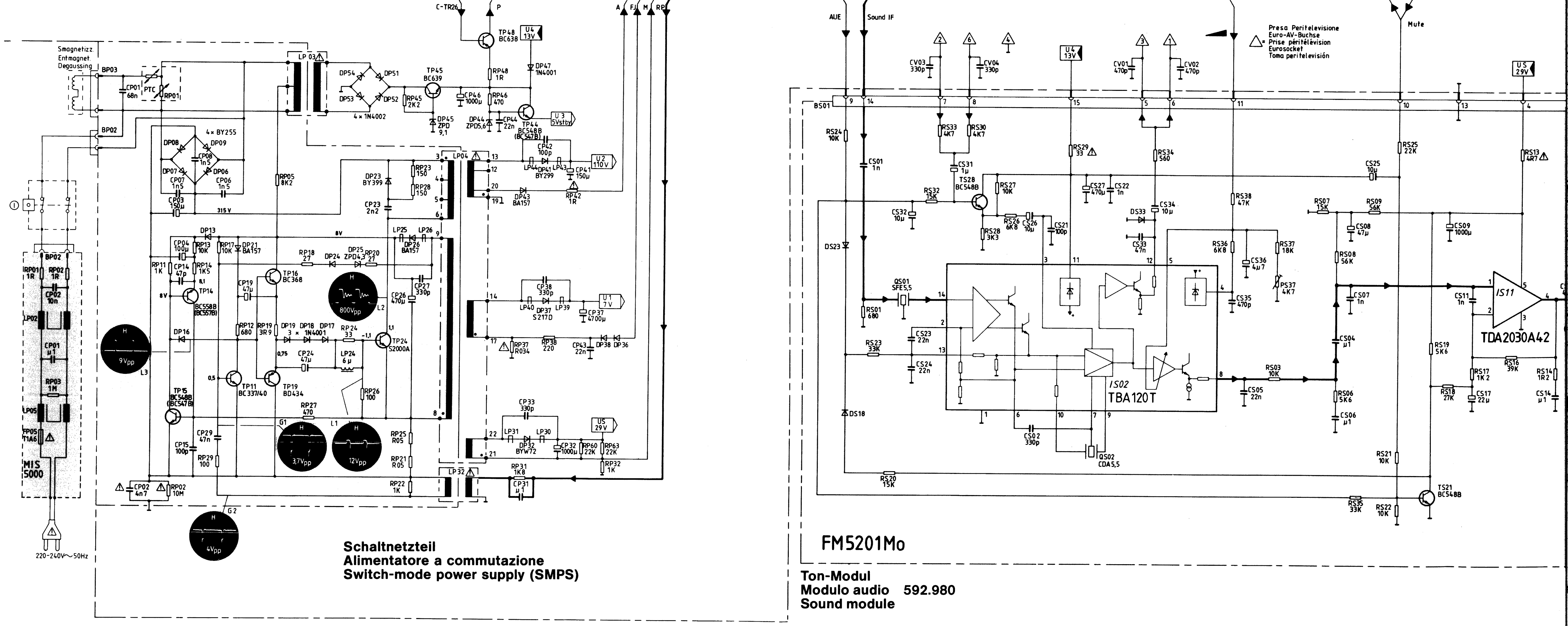
Computer Control 4
583.561

( ) = nur bei
solo con Color 3031
only with

○ = nur bei
solo con Spectra 3201
only with

Chroma-Video-Modul
Modulo crominanza video 592.730
Chroma video module


HF/ZF
AF/FI
RF/IF
276.798
VHF4100
UHF4100
276.799
IT20
TD6316AP
Decoder Driver
Decoder Propulsore
Latch Shiftreg 18Bit
Swallow Counter
Control
I136
TDA 4443
CHV5301AM
IC01
TDA 4556
SECAM
PAL
PAL/NTSC
Ident
Sandcastle impulso. p. detet.
Service Schalter servizio commut.
demod. cca Acc demod
burst Blank Suppression
Secam Ident
Norm
HK
FBAS
Sound IF
IF
AUE
75Ω


Smagnetizz. Entmagnet. Degaussing
MIS 5000
220-240V~50Hz
9Vpp
800Vpp
3,7Vpp
12Vpp
4Vpp
3Vpp
Presa Peritelevisione
Euro-AV-Buchse
Prise péritélévision
Eurosocket
Toma peritelevisión
Mute
IS02
TBA120T
IS11
TDA2030A42
FM5201Mo

△ = Euro-AV-Buchse Presa Peritelevisione Eurosocket			
1	NF/AF 'R' ○→ BF 'D' 0,5 V RMS	12	X
2	NF/AF 'R' ←○ BF 'D' 0,5 V RMS	13	⊥ Video R
3	NF/AF 'L' ○→ BF 'S' 0,5 V RMS	14	X
4	⊥ NF/AF BF	15	Video R ←○ 0,7 V RMS
5	⊥ Video B	16	Blanking ←○ Spegnim. Video
6	NF/AF 'L' ←○ BF 'S' 0,5 V RMS	17	⊥ Video
7	Video B ←○ 0,7 V RMS	18	⊥ Blanking Spegnimento
8	Mode AV ≙ 12 V	19	Video ○→ 1 Vpp/75 Ω
9	⊥ Video G/V	20	Video ←○ 1 Vpp/75 Ω
10	X	21	⊥ Chassis Telaio
11	Video G/V ←○ 0,7 V RMS		V RMS = Veff Vpp = Vss

Achtung!

Bei Arbeiten am Schaltnetzteil Trenntrafo verwenden, und Messungen in diesem Bereich gegen Masse des Schaltnetzteils (Emitter TP 15) ausführen.

Attenzione!

Per i lavori sull'alimentatore a commutazione, bisogna utilizzare un trasformatore separatore ed effettuare le misurazioni in questo ambito verso massa dell'alimentatore a commutazione (emettitore TP 15).

Attention!

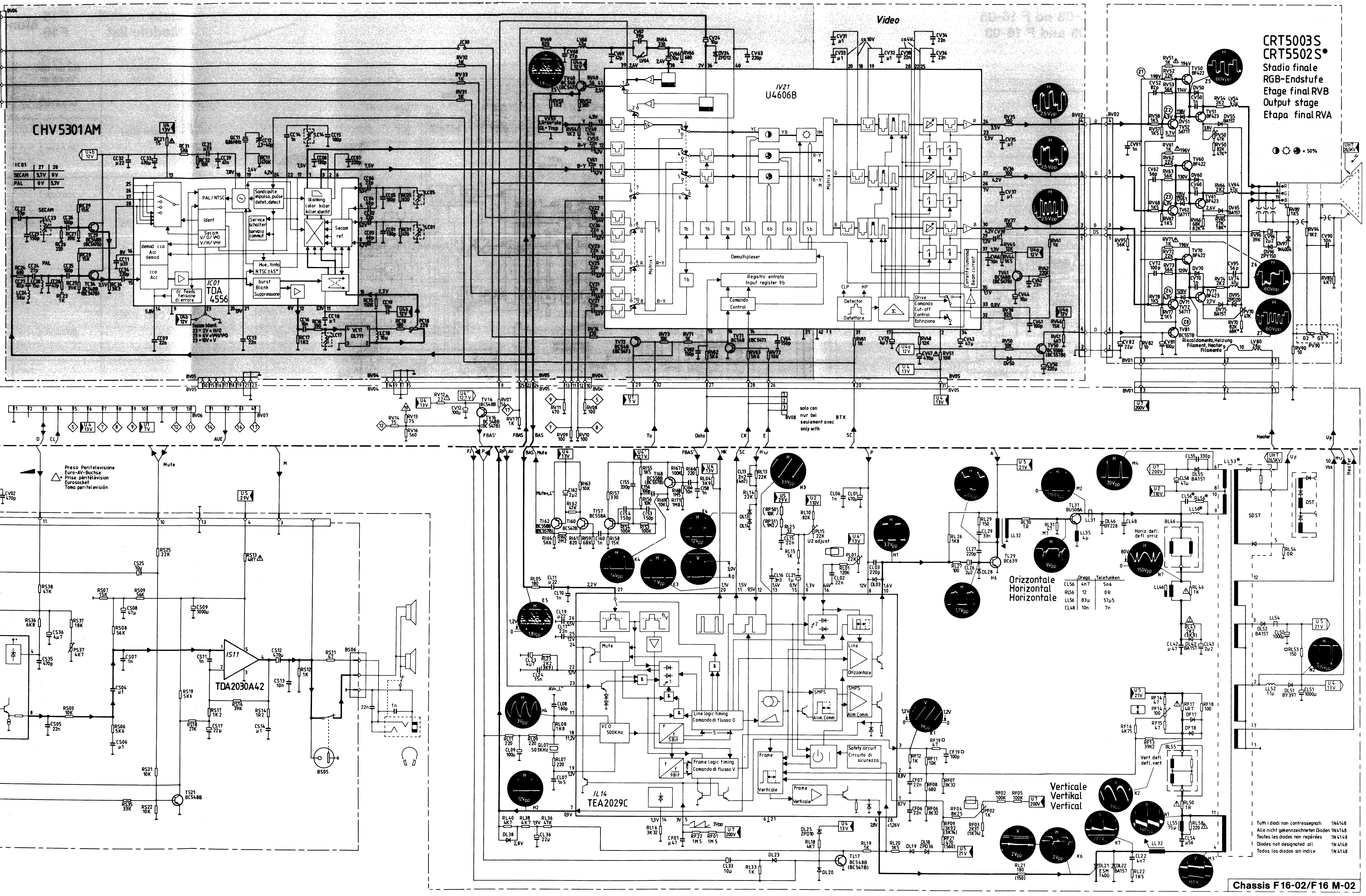
When carrying out repair work on components in the primary circuit of the switch mode power supply (SMPS), an isolating transformer must be employed. Measurements to be taken against ground within the primary side of the SMPS (emitter of TP 15).

Schaltnetzteil
Alimentatore a commutazione
Switch-mode power supply (SMPS)

Ton-Modul
Modulo audio 592.980
Sound module

Chroma-Video-Modul
Modulo crominanza video **592.730**
Chroma video module

Bildrohranschluß-Platine
Piastra zoccolo cinescopio **592.977**
P.C.B. CRT socket

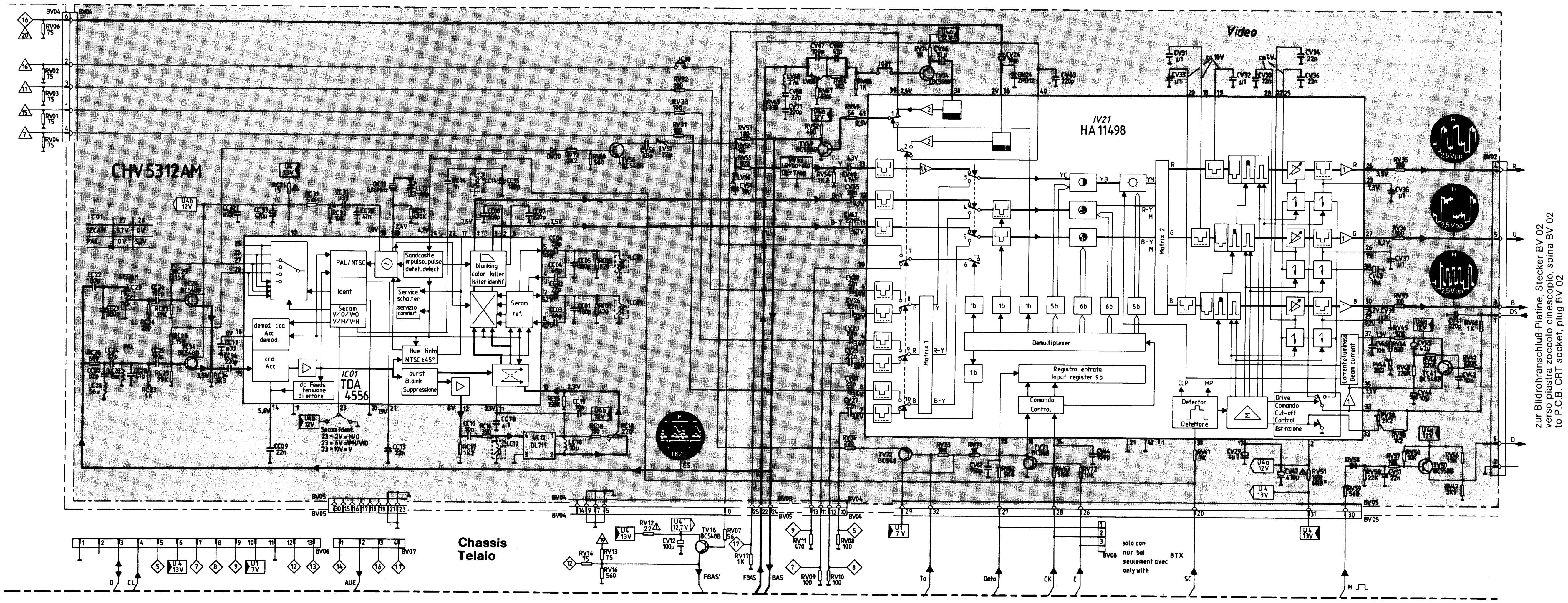

CHV5301AM
IC01 TDA 4556
Video
IV21 U4606B
Demultiplexer
Registro entrata Input register 9b
Comando Control
Detector Detettore
CRT5003S
CRT5502S•
Stadio finale
RGB-Endstufe
Etage final RVB
Output stage
Etapa final RVA
Riscaldamento, Heizung Filament, Heater, Filamento
solo con nur bei seulement avec only with BTX
Presa Peritelevisione Euro-AV-Buchse Prise péritélévision Eurosocket Toma peritelevisión
Mute
IS11 TDA2030A42
IL14 TEA2029C
VCO 500KHz
Line logic timing Comando di flusso O
Frame logic timing Comando di flusso V
Safety circuit Circuito di sicurezza
SMPS Alim.Comm
Line Orizzontale
Frame Verticale
Orizzontale
Horizontal
Horizontale
Verticale
Vertikal
Vertical
Horiz. defl. defl. orizz.
Vert. defl. defl. vert.
SDST
DST
BU508A
BC639
U2 adjust

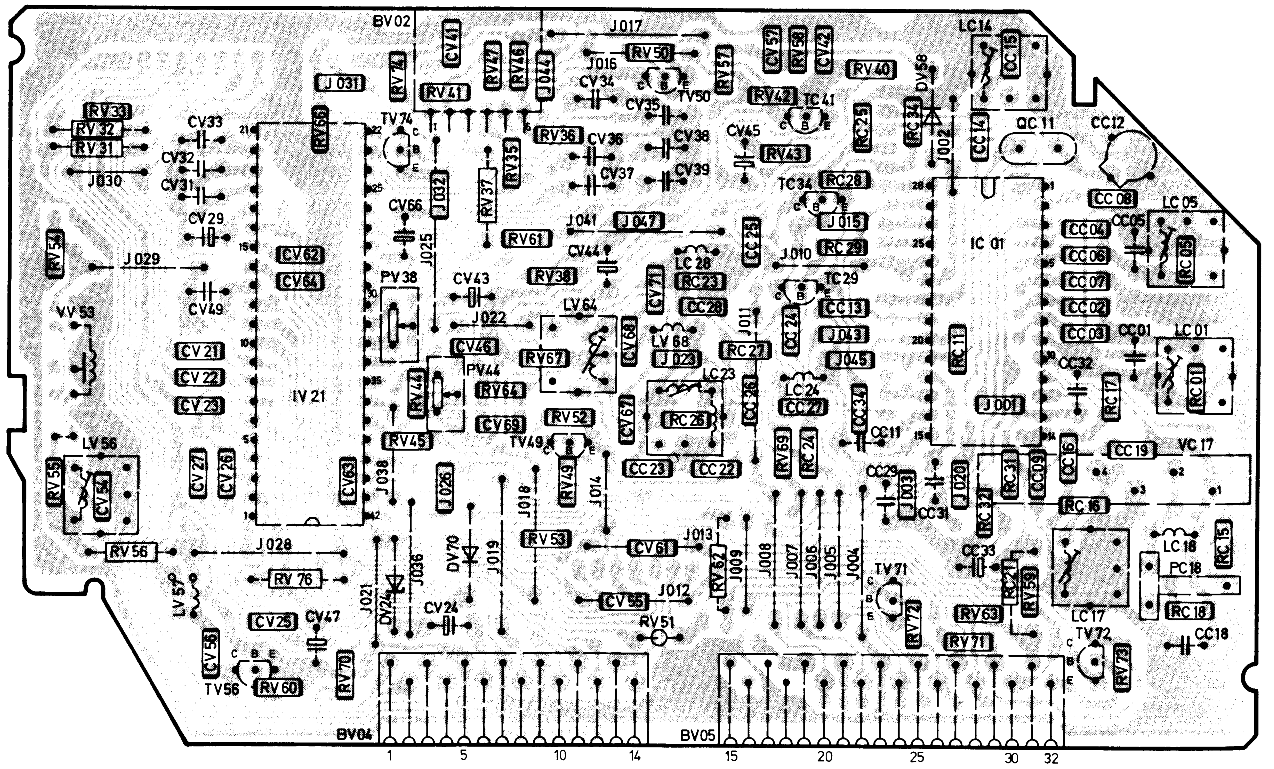
Tutti i diodi non contressegnati 1N4148
Alle nicht gekennzeichneten Dioden 1N4148
Toutes les diodes non repérées 1N4148
Diodes not designated all 1N4148
Todos los diodos sin indice 1N4148

Chassis F16-02/F16 M-02

Chroma-Video-Modul für Chassis F 15-03 und F 16-03
Modulo crominanza video per i telai F 15-03 ed F 16-03
Chroma video module for Chassis F 15-03 and F 16-03

Chroma-Video-Modul
Modulo crominanza video 592.780
Chroma video module


Video
IV21
HA 11498
CHV5312AM
IC01
TDA 4556
Demultiplexer
Registro entrata
Input register 9b
Matrix 1
Matrix 2
Chassis
Telaio
solo con
nur bei
seulement avec
only with
BTX
zur Bildrohranschluß-Platine, Stecker BV 02
verso piastra zoccolo cinescopio, spina BV 02
to P.C.B. CRT socket, plug BV 02



Chroma-Video-Modul
Modulo crominanza video 592.780
Chroma video module
Lötseite – Lato saldature – Soldered side

Modulliste
Lista moduli
Module list

F15
F16 Mon

Gerätename Modello Model	Typen-Nr. No. del tipo Model nr.
Color 3031	986.526 J
	987.526 J
Color 3035	986.529 J
	987.529 J
Color 3038	986.563 J
	987.535 J
Color 3135	986.525 A
Spectra 3201	987.527 A
Spectra 3205	987.520 A

Nachrüstmöglichkeiten

Alle Mono-Farbfernsehgeräte mit dem Chassis
den folgenden Nachrüstsätzen ergänzt werde

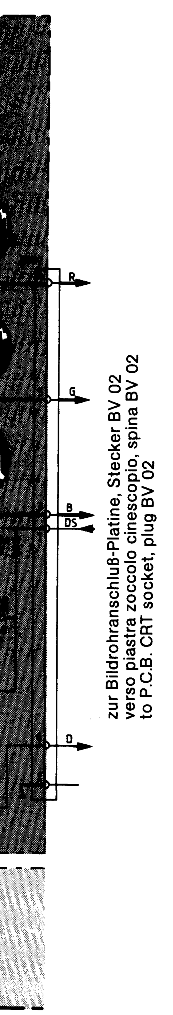
Artikel-Nr.	Teile-Art*	Nachrüs
986.581 A 00 (Nord)[1] 986.581 B 00 (Süd)[2]	V V	Videote mit 2 Se
279.963	K	Multista (SECAM
279.965	K	SECAM
279.983	K	DCCI zu Farbübe
987.682 A 00	K	erweiter Kanäle S

[1] = Zeichengenerator für Nordeuropa (Deutschland, Großbritannien, Schwede

[2] = Zeichengenerator für Südeuropa (Deutschland, Frankreich, Italien)

*V = Vertriebsartikel

K = Kundendienstartikel


B
G
B
DS
D
zur Bildrohranschluß-Platine, Stecker BV 02
verso piastra zoccolo cinescopio, spina BV 02
to P.C.B. CRT socket, plug BV 02

Modulliste
Lista moduli F 15 F 16 Mono
Module list

Gerätename Modello Model	Typen-Nr. No. del tipo Model nr.	Fernbedienung Telecomando Remote control	Infrarot-Vorverstärker Preamplificatore infrarossi Infra-red pre-amplifier	Bedienteilplatte Piastra sezione comandi Control unit board	Chassis-Nr. No. del telaio Chassis nr.	Chroma-Video-Modul Modulo crominanza video Chroma video module	Bildrohranschluß-Platine Piastra zoccolo cinescopio P.C.B. CRT socket	Ton-Modul Modulo audio Sound module	VHF-Leiterplatte Piastra VHF P.C.B. VHF	UHF-Leiterplatte Piastra UHF P.C.B. UHF	Netzfilter Bobina d'arresto Mains filter
Color 3031	986.526 J	Computer-Control 4 583.561	583.521 B	KDB 5200 M 592.756	F 16 M-01 ICC 5116 MM	592.730	592.977	592.980	276.798	276.799	527.436
	987.526 J	Computer-Control 4 583.561	583.521 B	KDB 5108 M 592.755	F 16 M-02 ICC 5116 MM	592.730	592.977	592.980 596 TX 2162*	276.798	276.799	527.436
					F 16 M-03 ICC 5116 MM	592.780					
Color 3035	986.529 J	Computer-Control 4 583.561	583.521 B	KDB 5200 M 592.756	F 15 M-01 ICC 5115 ML	592.730	592.977	592.980	276.798	276.799	527.436
	987.529 J	Computer-Control 4 583.561	583.521 B	KDB 5108 M 592.755	F 15 M-01 ICC 5115 ML	592.730	592.977	592.980 596 TX 2162*	276.798	276.799	527.436
					F 15 M-03 ICC 5115 ML	592.780					
Color 3038	986.563 J	Computer-Control 4 583.561	583.521 B	KDB 5108 M 592.755	F 15-01 / F 15-02 785.522 B 01 115-01	592.730	592.977	592.980	276.798	276.799	527.436
	987.535 J	Computer-Control 4 583.561	583.521 B	KDB 5108 M 592.755	F 15-01 / F 15-02 785.522 B 01 115-01	592.730	592.977	592.980	276.798	276.799	527.436
					F 15-03 785.522 B 03 115-03	592.780					
Color 3135	986.525 A	Computer-Control 4 583.561	583.521 C	KDB 5202 M 592.987	F 15 M-01 ICC 5115 ML	592.730	592.977	592.980	276.798	276.799	527.436
Spectra 3201	987.527 A	Computer-Control 4 583.561	583.521 B	KDB 5108 592.755	F 16-02 785.526 B 01 116-01	592.730	592.977	592.980	276.798	276.799	527.436
					F 16-03 785.526 B 03 116-03	592.780					
Spectra 3205	987.520 A	Computer-Control 4 583.561	583.521 B	KDB 5108 592.755	F 15 M-01 ICC 5115 ML	592.730	592.977	592.980 596 TX 2162*	276.798	276.799	527.436
					F 15 M-03 ICC 5115 ML	592.780					

*wahlweise
sostitutivo
alternative

Nachrüstmöglichkeiten

Alle Mono-Farbfernsehgeräte mit dem Chassis F 15 und F 16 können mit den folgenden Nachrüstsätzen ergänzt werden:

Artikel-Nr.	Teile-Art*	Nachrüstung
986.581 A 00 (Nord)[1] 986.581 B 00 (Süd)[2]	V V	Videotext mit 2 Seitenspeichern
279.963	K	Multistandard (SECAM L + NTSC)
279.965	K	SECAM L (Frankreich)
279.983	K	DCCI zur Verbesserung der Farbübergänge
987.682 A 00	K	erweiterter Sonderkanalbereich, Kanäle S 21 – S 41 (Hyperband)

[1] = Zeichengenerator für Nordeuropa (Deutschland, Großbritannien, Schweden)

[2] = Zeichengenerator für Südeuropa (Deutschland, Frankreich, Italien)

*V = Vertriebsartikel
K = Kundendienstartikel

Possibilità di corredamento

Tutti i televisori a colori Mono con il telaio F 15 o F 16 possono essere completati con i seguenti set di corredamento:

Numero di consegna	Tipo di componente*	Corredamento
986.581 A 00 (Nord)[1] 986.581 B 00 (Sud)[2]	V V	Videotel con 2 memorie di pagina
279.963	K	Multistandard (SECAM L + NTSC)
279.965	K	SECAM L (Francia)
279.983	K	DCCI per ottimizzare le transizioni di colore
987.682 A 00	K	Ambito di canali speciali espanso, canali S 21 – S 41 (Hyperband)

[1] = Generatore di segnali per Europa del Nord (Germania, Gran Bretagna, Svezia)

[2] = Generatore di segnali per Sud-Europa (Germania, Francia, Italia)

*V = Articoli di vendita
K = Articoli servizio assistenza

Modification available

For CTV-sets fitted with the chassis F 15 and F 16 the following retrofit-sets are available:

Part Nr.	Article sales code*	Retrofit-Set for
986.581 A 00 (North)[1] 986.581 B 00 (South)[2]	V V	Teletext with 2 page storage
279.963	K	Multi-Standard (SECAM L + NTSC)
279.965	K	SECAM L (France)
279.983	K	DCCI module for Colour Contour Improvement
987.682 A 00	K	Extended special channel band Channels S 21 – S 41 (hyper-band)

[1] = Character-Generator for Northern Europe (Germany, Great Britain, Sweden)

[2] = Character-Generator for Southern Europe (Germany, France, Italy)

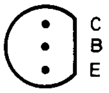
*V = Sales-Article
K = Service-Article

NORDMENDE

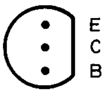
Sockelschaltungen

Circuiti a zoccolo

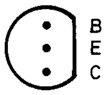
Socket connections



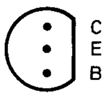
BC 328-40
BC 337-40
BC 547 B/C
BC 548 B/C
BC 557 B/C
BC 558 A/B/C



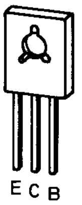
BC 368
BC 638
BC 639
BF 422
BF 423



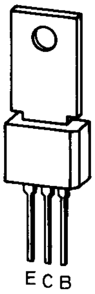
BF 763
2 SC 2512



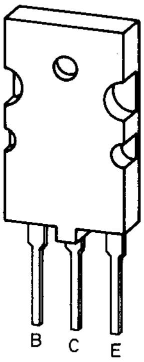
BF 959



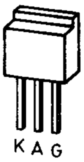
BD 434



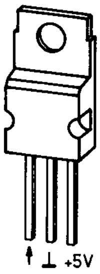
S 671 T



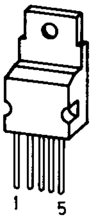
BU 508 A
S 2000 A



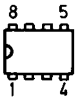
ESM 7406



MC 7805 CT



TDA 2030



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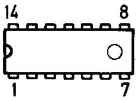

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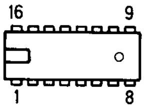

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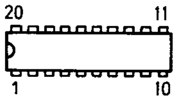

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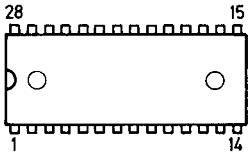

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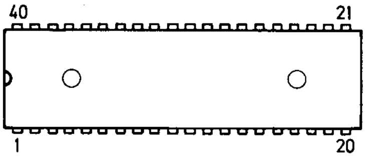
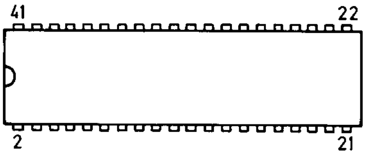


CCU SER 06



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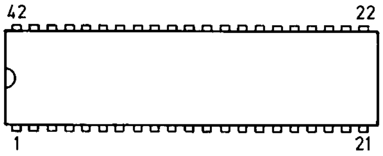

HA 11498

NORDMENDE